Discoverer

AQS Discoverer Web User Guide

Version 1
30 September 2004

United States Environmental Protection Agency
OAR, OAQPS, ITPID,
IMG (MD-C339-04)
RTP, NC 27711

Table of Contents

Chapter 1

What is Discoverer?

A business intelligence tool from Oracle Corporation for ad hoc queries, reporting, analysis, and Web publishing.

Discoverer is a tool for retrieving data from a relational database. It works with databases designed for online transaction processing or as a data warehouse. Oracle designed this tool to give non-technical users access to information in a familiar spreadsheet-style format – easy to read and understand as well as share with others.

Oracle Application Server Discoverer has six components. The US EPA has deployed two of these components (Discoverer Plus and Discoverer Viewer) in its web architecture so that end-users no longer have to purchase and install separate Discoverer software.

Intent of This Guide

This guide is intended to provide specific information for using **Discoverer Plus** with the EPA's Air Quality System (AQS) database. It covers how to connect to the AQS database using Discoverer; how to create, save and share a workbook; how to change the default worksheet settings; and where to go for help with additional features. The current structure of the available business areas is also included.

Oracle Corporation provides extensive help for using the Discoverer tool in both Online Help and in their User's Guide.

Separate instructions for the **Discoverer *Viewer*** component are noted when needed. "Viewer" is a lightweight version of Plus that allows end-users to run queries that were created using the Plus or Desktop version of Discoverer.

Why Use Discoverer with AQS?

While the AQS application provides many reports, there are times when the exact information you want is not easily found in a report, or not in a useful format. Discoverer helps you:

- find data that you know is in the database
- access data quickly without waiting for the computer to search through the entire database
- view data in a familiar spreadsheet-style format that is easy to read and understand
- analyze data using a variety of powerful techniques including:
  - drilling up and down through data
  - finding data that meets certain conditions or that falls within ranges that you specify
  - sorting data
  - comparing results from "what if" scenarios
- prepare reports showing the results of your analysis
- share data with others, and in other applications (e.g., Microsoft Excel)

Prerequisites to run Discoverer Plus

OracleAS Discoverer Plus was installed as part of the Oracle Application Server in the US EPA environment. The Discoverer manager then created the Discoverer End User Layer (as part of the Oracle Developer Suite).

To use Discoverer Plus, on your client machine (i.e., your PC) you need:

- A java-enabled web browser (Internet Explorer 5.5 or later, or Netscape 4. or later)
- Administrative privileges on the client machine so that you can install a Java Virtual Machine (JVM) such as Oracle JInitiator
- At least 15KB of Users Personal Profile Space for the Oracle Jar Cache
- A minimum of between 25 – 50MB of available disk space to install a JVM

Prerequisites to run Discoverer Viewer

OracleAS Discoverer Viewer was also installed as part of the Oracle Application Server at EPA. It uses the same End User Layer as Discoverer Plus. To use Discoverer Viewer, on your client machine (i.e., your PC) you need:

- HTML through a web browser (IE 5.5 or later or Netscape 4.7 or later)
- JavaScript enabled in the browser

First Time Use of Discoverer Plus

The first time you use a machine (PC) to connect to Discoverer Plus, the Discoverer Plus applet is downloaded from the Discoverer Services tier on the EPA network and cached on the client machine. The Discoverer Plus applet provides the Discoverer Plus user interface and functionality for creating workbooks and analyzing data. When the user logs on subsequently, the Discoverer Plus applet runs from the local cache and does not need to be downloaded.

Step-by-step logon to Discoverer Plus guidance is provided in Chapter 2.

Key Terminology

There are a few terms that are important to understand when working with Discoverer.

Discoverer uses a view of the database called the End User Layer (EUL). The EUL is a server based metadata repository. It provides a relatively easy-to-understand view of the database so that end users can concentrate on the data in the database without having to worry about the structure of the database. This EUL is created by the Discoverer Administrator. It protects the data in the database – the integrity of the database cannot be compromised with Discoverer. Without the EUL, Discoverer will not work.

This EUL is subdivided into Business Areas (BA). A BA contains a group of tables related to particular areas of interest to end users. Typically, end users are not interested in all of the tables in an EUL. For example, information on which reports have been requested is only valuable information to staff responsible for the AQS software and not to people interested in annual summary data. The primary business area for AQS is named "AQS Basic".

Folders in a business area are the tables and views from the database that are available to end users. There may also be folders created by the Discoverer Administrator that contain items from multiple tables or views. An example of this is the folder named "PARAMETER CLASSIFICATIONS" which contains the classification description from the Classifications table along with the parameter classification code. Since the folders are only seen through Discoverer's business areas, the names can be modified to be more meaningful to end users than the exact table and column names used in the database.

Items are basically the columns in the tables, i.e., different types of information within a folder. For example, in the "AGENCIES" folder, "Agency Code" is the 4-character identifier assigned to an agency reporting, analyzing or collecting AQS data.

Worksheets and Workbooks are the parts you create using Discoverer. They hold the queries you submit.

Here is a simple chart with the Discoverer terms and the similar terms used in database and spreadsheet products:

Discoverer Terminology	Database/Spreadsheet Terminology
Items	Columns
Records	Rows
Folders	Tables
Worksheets	Queries/Spreadsheets
Workbooks	Group of Spreadsheet files
Business Area (BA)	Grouping of Tables
End User Layer (EUL)	Interface to database

Table 1

The AQS Basic Business Area

The "AQS Basic" business area was created from the views of the database described in the Data Dictionary along with reference tables such as "States", "Parameters". Whenever a view is used instead of a physical database table, the folder name in Discoverer is followed by the letter "V".

> ***Views are logical representations of data, where data elements are grouped together from one or more physical tables.***

Sometimes, you will only need to refer to one folder to find the data you are seeking. Other times, you will need to look in more than one folder. You can request information from multiple tables whenever there is an established link between them. For example, the "Sites" folder is linked to the "Tangent Roads" folder according to the data model below. So, if you wanted more information on a tangent road than what is included in the site folder, you can see any related information in the "Tangent Roads" folder. The data models below indicate relationships between the various folders in the business areas. You may find it helpful to refer to them when creating a workbook. When you study the data models, you'll notice that almost every folder is connected to "Monitors".

The "AQS Basic" business area contains those folders most frequently used, but you may notice that all the data entered into the database is not accessible from this business area. For example, "Raw Data" is not currently included in "AQS Basic". If you cannot get to the data you need, please let the IMG staff know and we will try to accommodate your needs. (Please remember that a standard report from the AQS application may be the best source of data for you.)

Data Model Diagrams

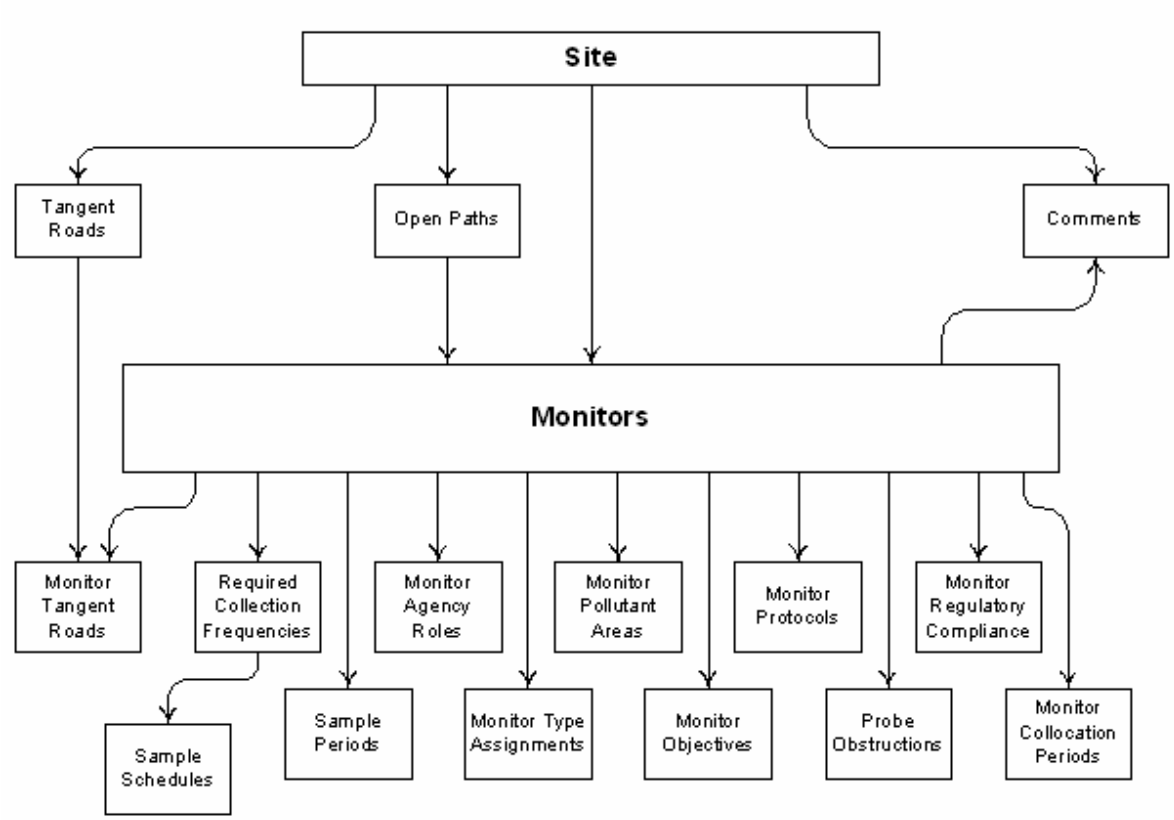


Figure 1

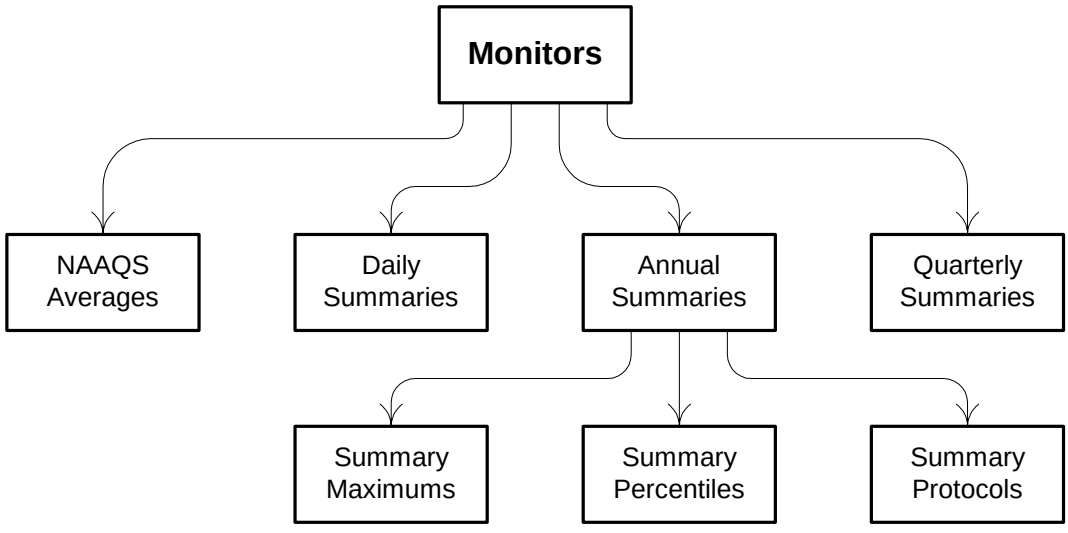


Figure 2

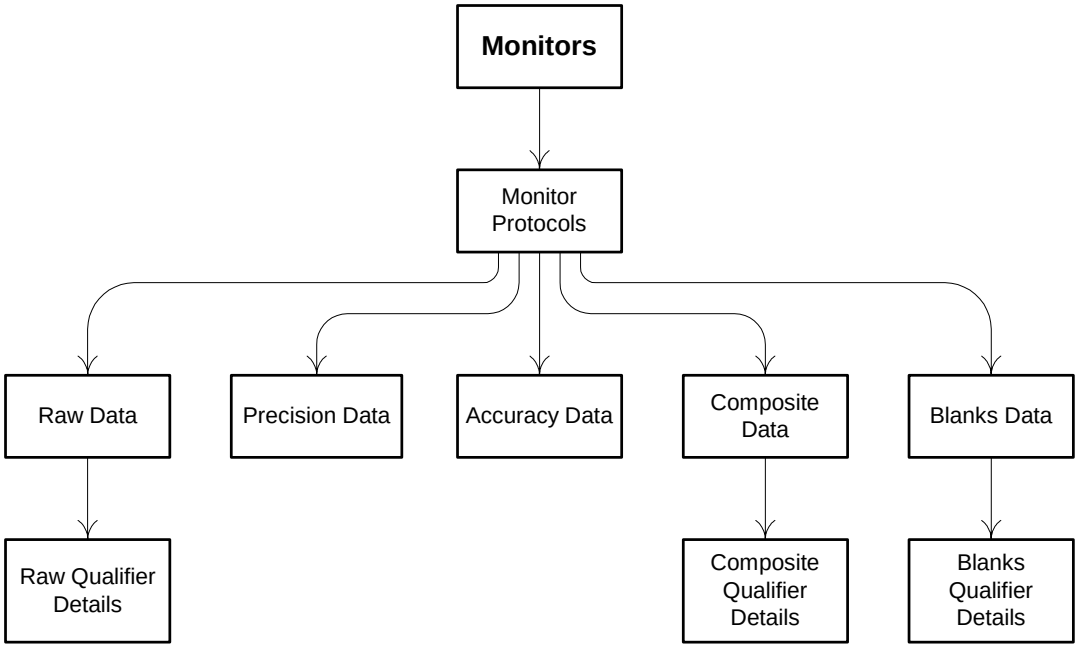


Figure 3

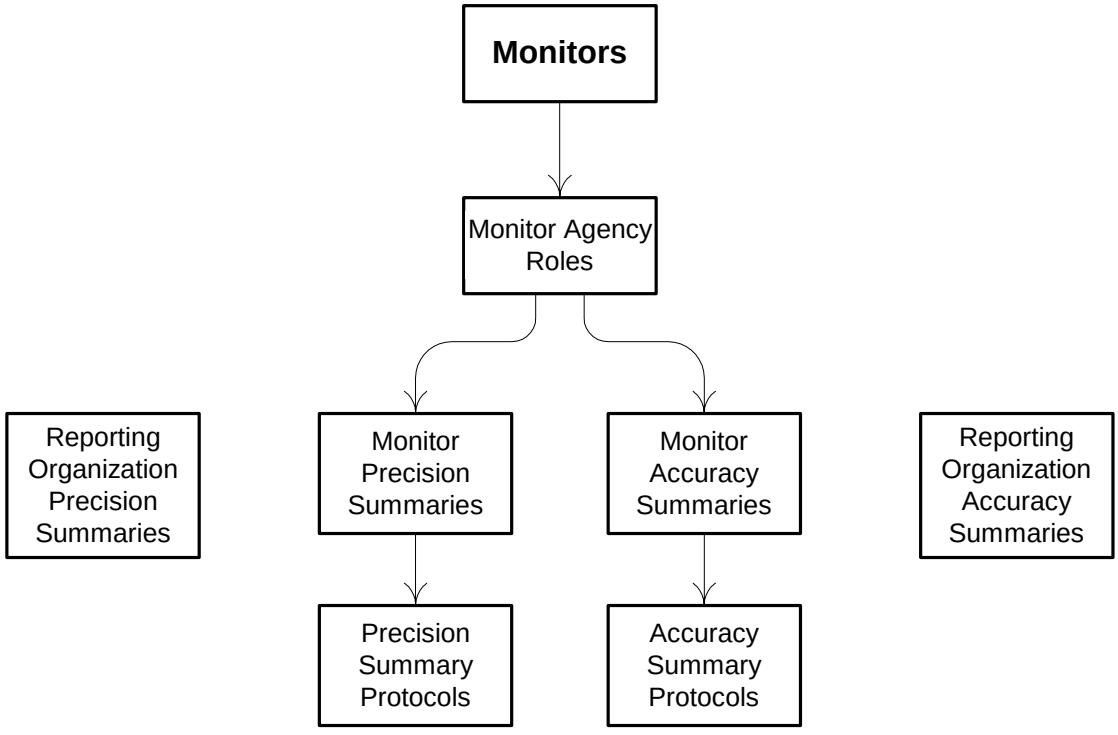


Figure 4

Chapter

2

Connecting to AQS with Discoverer

Point your browser to https://iasint.rtpnc.epa.gov/discoverer/plus (or if you are already behind the EPA firewall, simply http://iasint.rtpnc.epa.gov/discoverer/plus.) (You can also navigate to this page through the "AQS Web Application" link on the sidebar of the AQS area of the Technology Transfer Network (TTN) at http://www.epa.gov/ttn/airs/airsaqs/.)

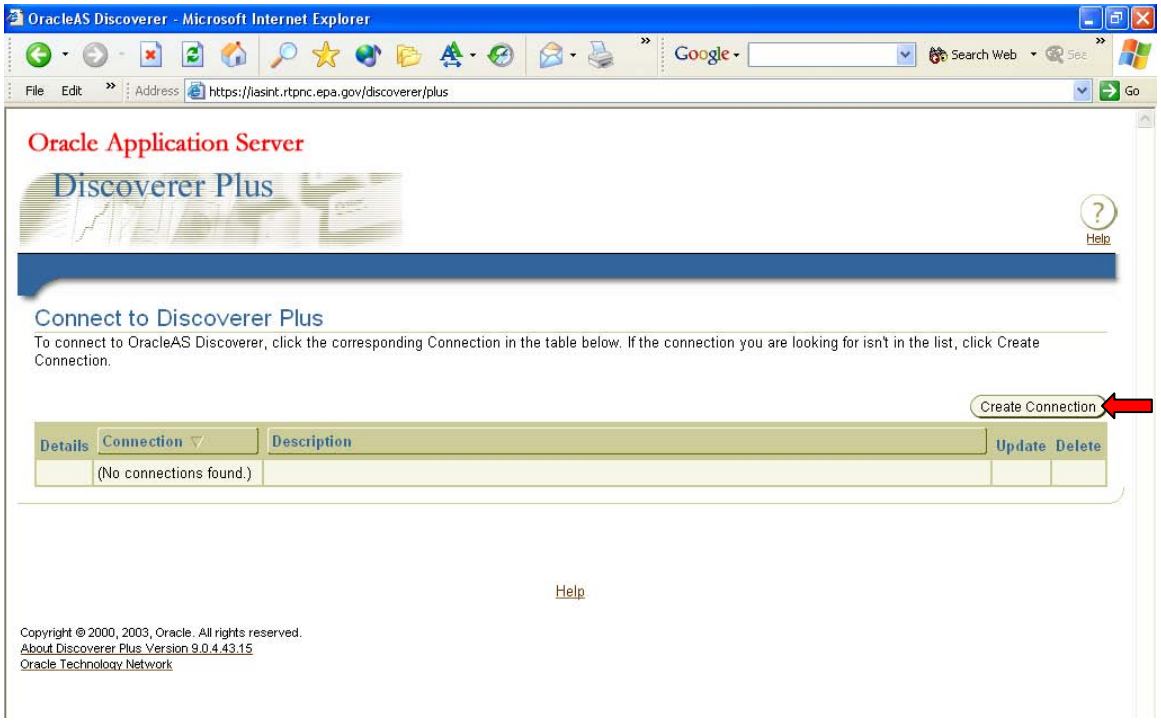


Figure 5

The first time you access this site on a PC, you must create a Discoverer Connection. This connection stores login details that enable you to connect to Discoverer. (Since this information is stored locally on your PC, it must be created on each PC you use with Discoverer.)

You provide this information by clicking on the "Create Connection" button to reach the screen shown below, where you provide a name for this connection, a connection description (optional), your 3-character EPA userid, your AQS password, and the database name: aqsprod. Click "apply" to save your connection information.

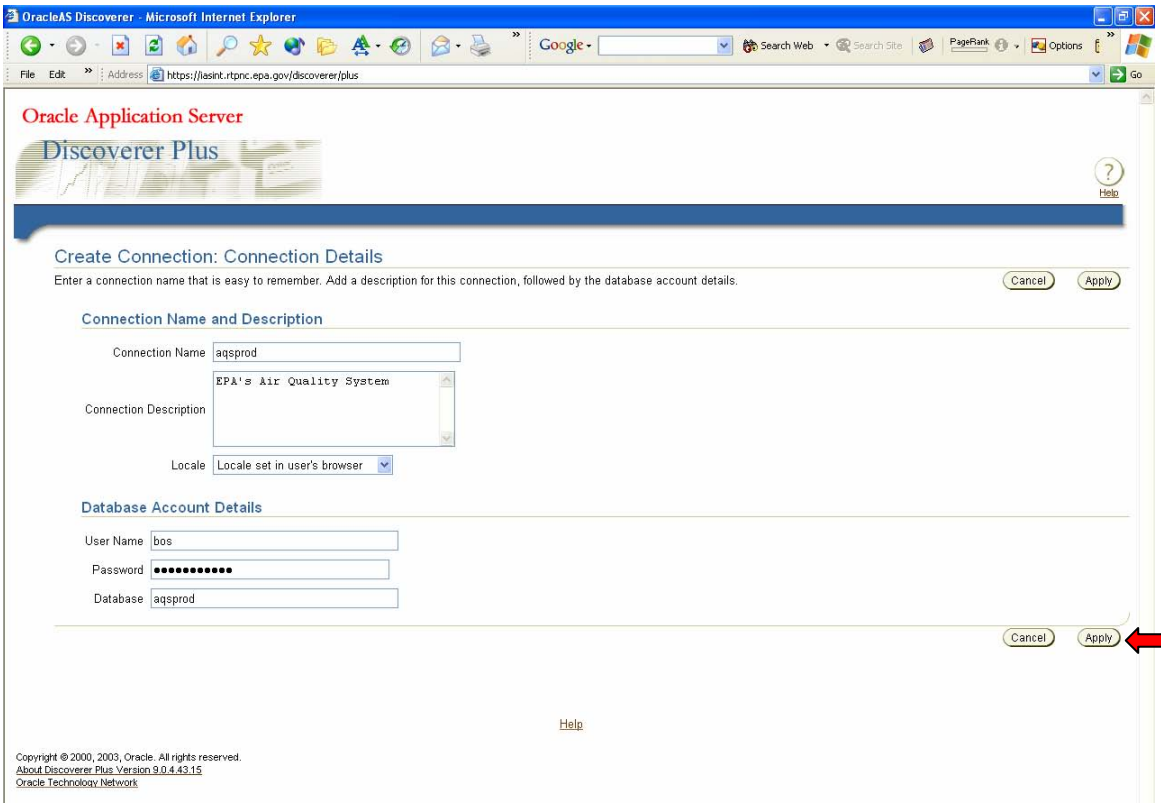


Figure 6

The next time you go to the AQS Discoverer Web link, you should see any connections you created.

Figure 7

Now you can use this connection to reach the EPA. Click on the connection name ("aqsprod" in the example shown above), enter your password, and click on Connect.

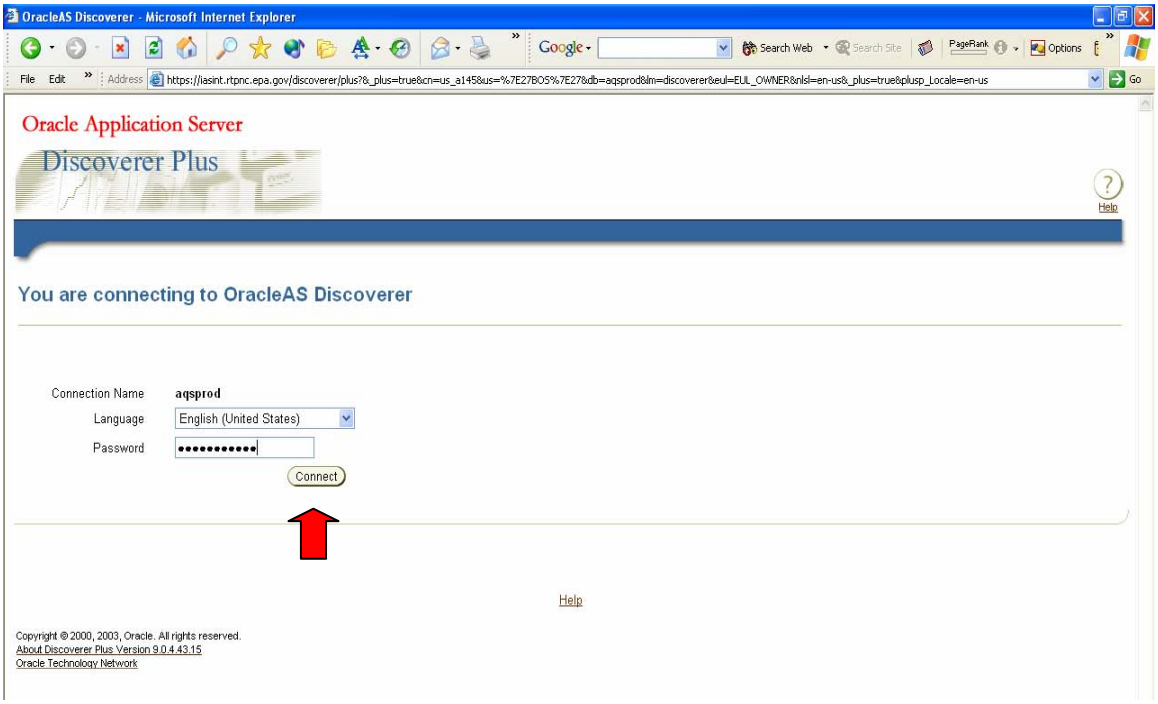
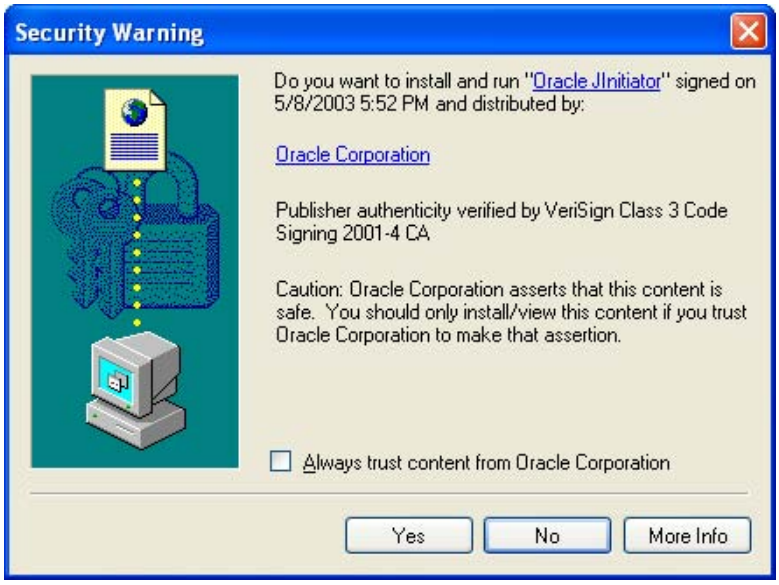


Figure 8

"First-time-only" Processes

There are a few more "first-time-only" processes to be completed. These may vary depending on the browser you are using and how your company's network is configured. Follow the on-screen instructions. The screens that appear with MS Internet Explorer are shown here.



You may see a Security Warning for installing the Oracle JInitiator. This JInitiator is needed for Discoverer Web to operate. If you do not want to see this message every time you connect, select "Always trust content from Oracle Corporation" and click Yes (or OK, or Grant, depending on your browser).

Figure 9

The initial setup will continue.

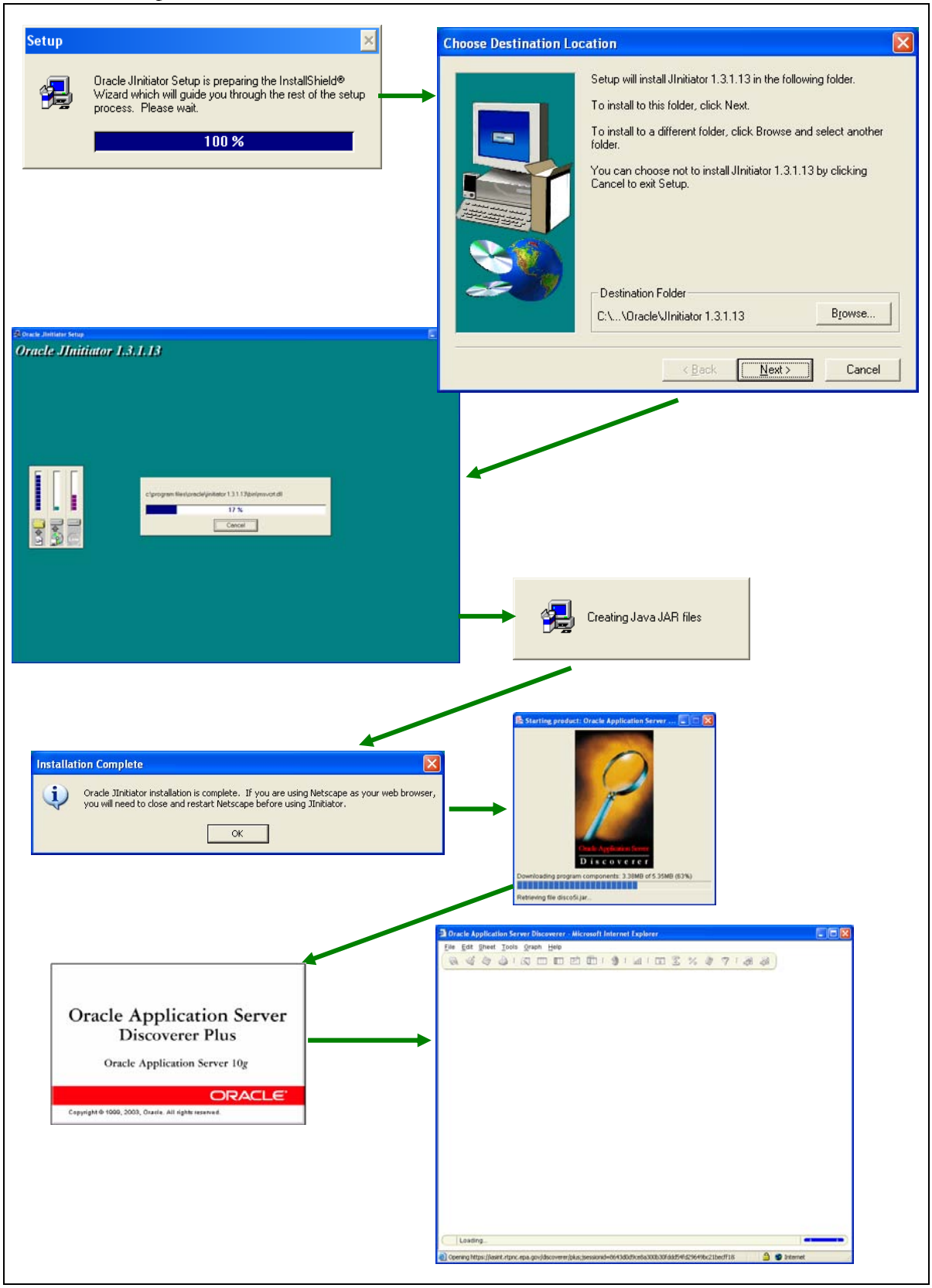


Figure 10

When you reach the relatively blank screen, you're there. The next time you use the same PC, you will advance much more quickly from screen where you enter your password to this screen. By default, the Workbook Wizard will start and lead you through all of the steps to create or open a workbook.

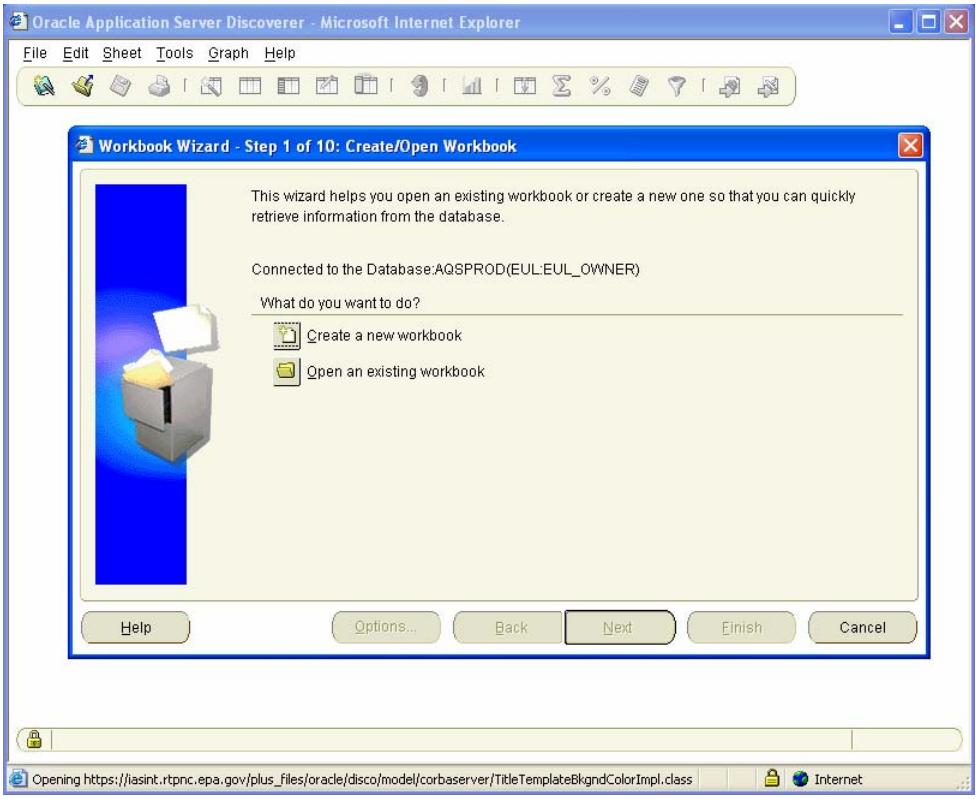


Figure 11

EXERCISE 1

1. **Launch a web browser**
2. **Go to https://iasint.rtpnc.epa.gov/discoverer/plus**
3. **Create your connection**
4. **Connect (stop when you see step 1 of the workbook wizard)**

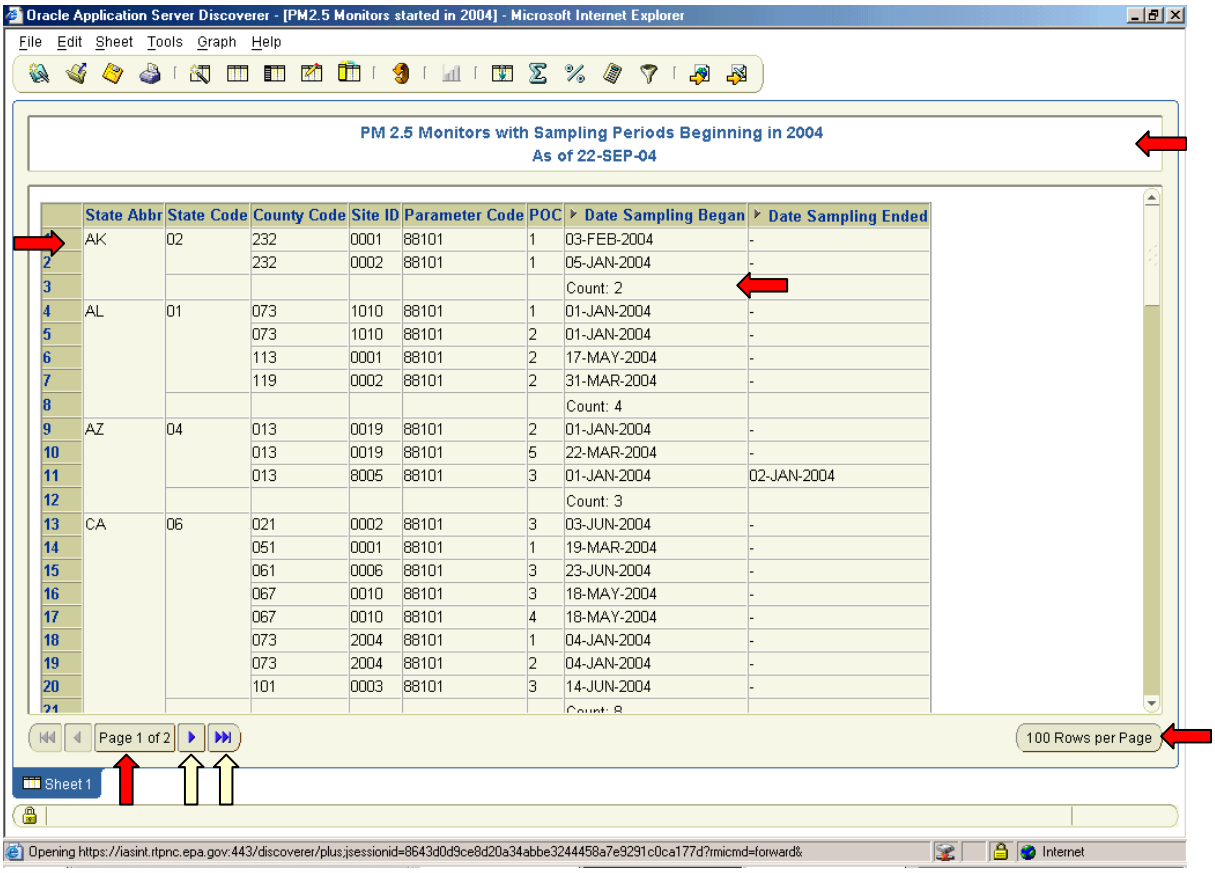
Chapter

3

Opening an Existing Workbook

"A picture's worth…"

A workbook named "PM 2.5 Monitors started in 2004" has already been set up and shared with all users to demonstrate using AQS data with Discoverer. (There is only one worksheet in this workbook.) It searches the AQS database (aqsprod) for all PM $_{2.5}$ (88101) monitors with a sampling begin date in 2004.



	State Abbr	State Code	County Code	Site ID	Parameter Code	POC	Date Sampling Began	Date Sampling Ended
1	AK	02	232	0001	88101	1	03-FEB-2004	-
2			232	0002	88101	1	05-JAN-2004	-
3							Count: 2	
4	AL	01	073	1010	88101	1	01-JAN-2004	-
5			073	1010	88101	2	01-JAN-2004	-
6			113	0001	88101	2	17-MAY-2004	-
7			119	0002	88101	2	31-MAR-2004	-
8							Count: 4	
9	AZ	04	013	0019	88101	2	01-JAN-2004	-
10			013	0019	88101	5	22-MAR-2004	-
11			013	8005	88101	3	01-JAN-2004	02-JAN-2004
12							Count: 3	
13	CA	06	021	0002	88101	3	03-JUN-2004	-
14			051	0001	88101	1	19-MAR-2004	-
15			061	0006	88101	3	23-JUN-2004	-
16			067	0010	88101	3	18-MAY-2004	-
17			067	0010	88101	4	18-MAY-2004	-
18			073	2004	88101	1	04-JAN-2004	-
19			073	2004	88101	2	04-JAN-2004	-
20			101	0003	88101	3	14-JUN-2004	-

Figure 12

The steps to create this workbook will be explained in Chapter 4. For now, notice at least 5 things about this particular worksheet:

- Title
- Sort
- Count
- Number of pages
- Number of rows per page

These are all features you control. You might also notice the arrows for advancing through the results a page at a time and for skipping directly to the last page.

With this worksheet open you can examine the work area. Notice in particular that under the File menu, you have the option to export your results directly to HTML or Excel. Probably the most used option is found under the Sheet menu: Edit Sheet. This option lets you modify the worksheet you are viewing – without totally recreating the sheet from scratch.

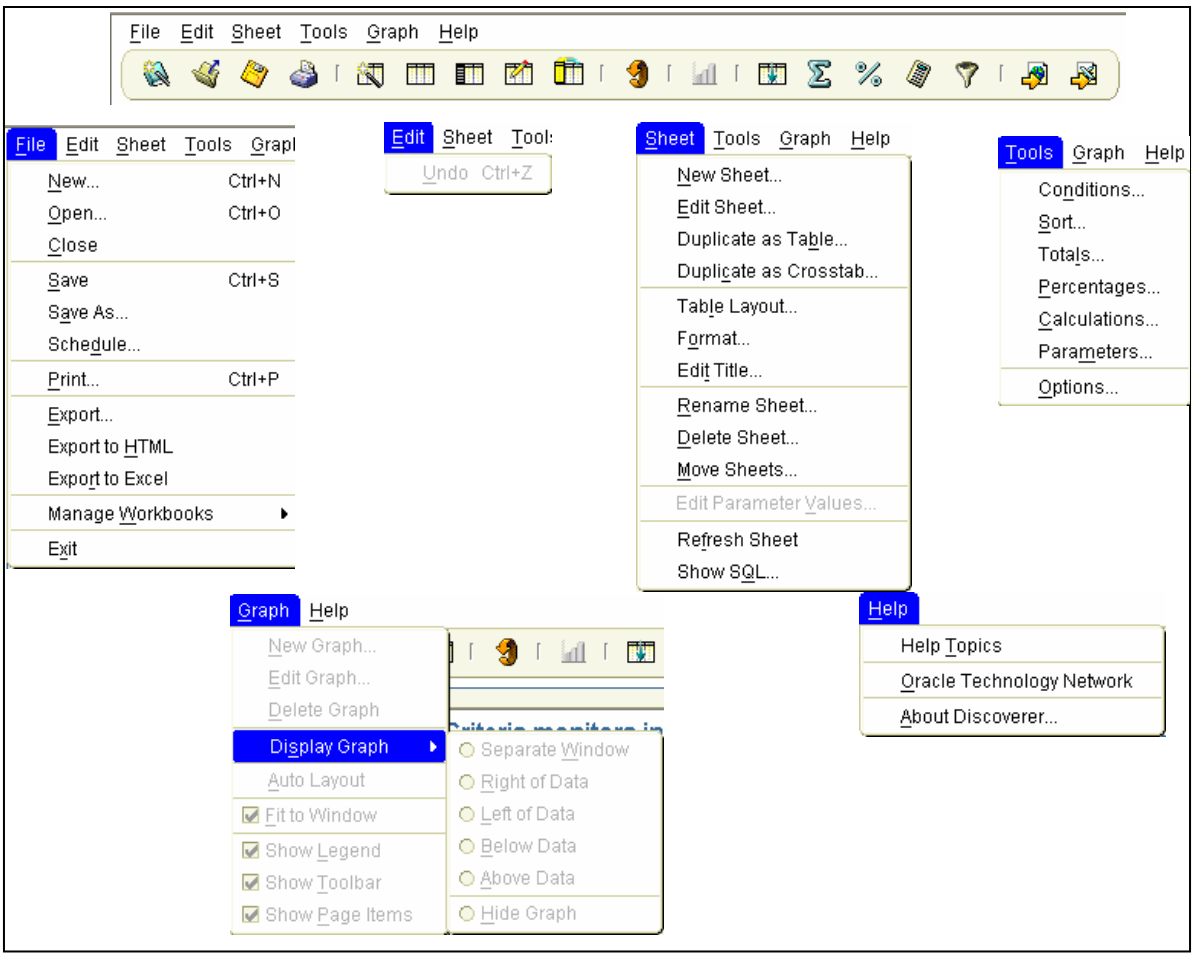


Figure 13

As with all Windows-type applications, there are multiple ways to accomplish the same task. If you become a frequent user of Discoverer, you may find the icons quicker than the menu options.

Once you have a general understanding of how Discoverer works, all the detail things you want to know about are actually available via the HELP menu option. There is Online Help as well as an Oracle web site named the Oracle Technology Network (OTN). The OTN community includes a

technical forum for Discoverer. This access is free, but you must register to post a question.

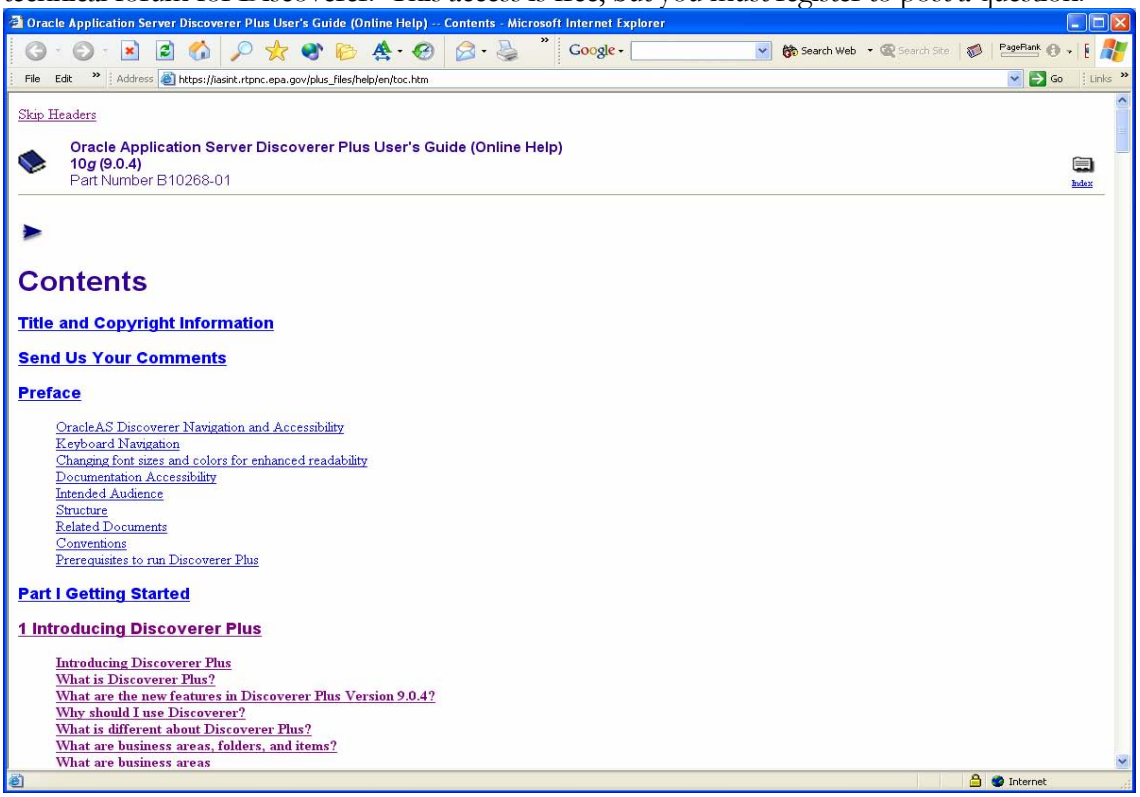


Figure 14

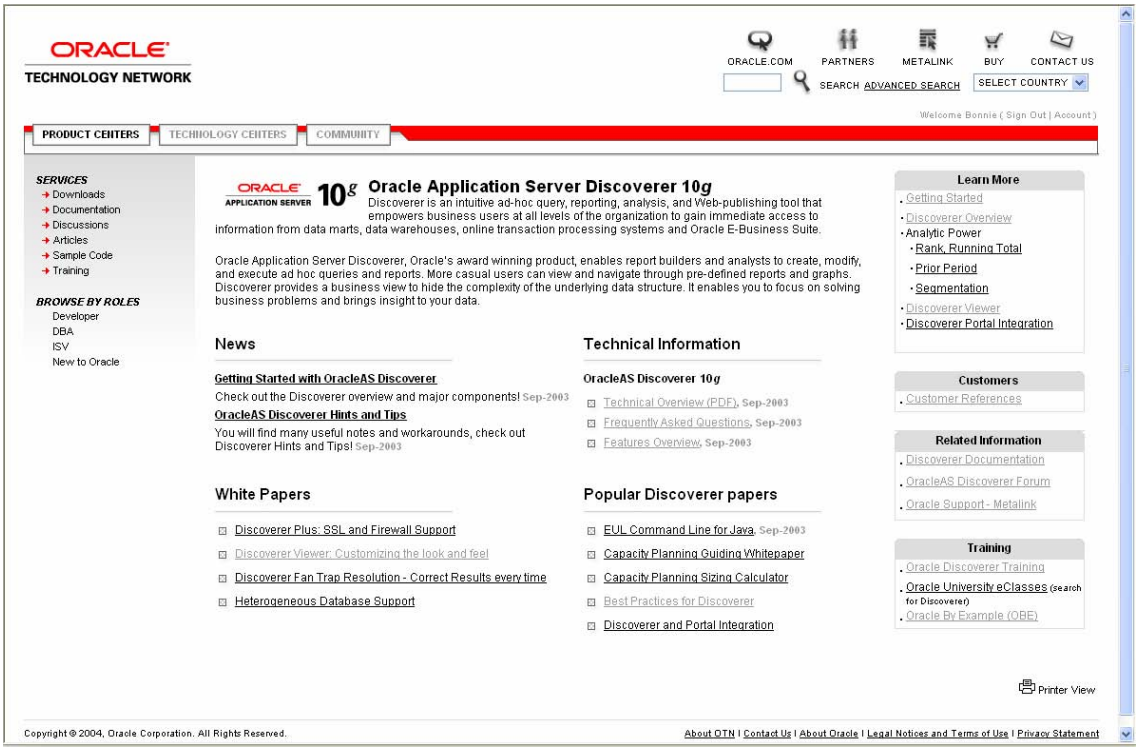


Figure 15

EXERCISE 2

1. **Connect**
2. **Open an existing workbook in the AQS Basic business area**
3. **Run the workbook**
4. **Use the Sheet/Edit menu option to explore the setup of the workbook**

Chapter

4

Creating a New Workbook

At the end of Chapter 1, step 1 of the Workbook Wizard was shown. This chapter will take you step by step through that wizard to create the workbook shown in Chapter 3, "$PM_{2.5}$ Monitors started in 2004".

The Goal: Find all the PM 2.5 monitors that have sampling dates beginning in the year 2004. Sort them by state abbreviation, then county, site, and POC. Show the start date for the sampling periods and any end dates. Show a count of the number of these monitors in each state. Add a title for the workbook and save it on the database.

Step 1 - Create/Open Workbook

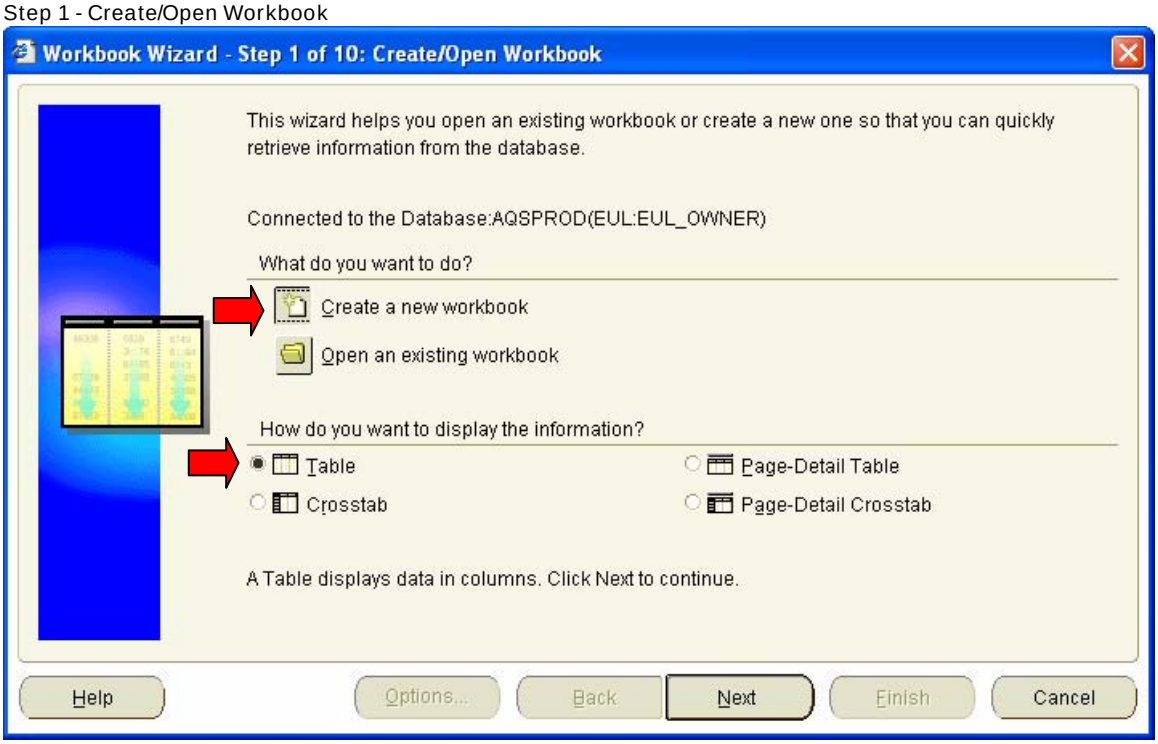


Figure 16

The first step is to select "Create a new workbook". Once that selection is made, the next part of the screen asks "How do you want to display the information?" There are four choices, but you are not restricted from changing the look of your results after making this selection. The Sheet menu

provides the path to change from a table to a crosstab and to organize results so that all rows satisfying part of the request are grouped together by page.

Step 2 – Select Items

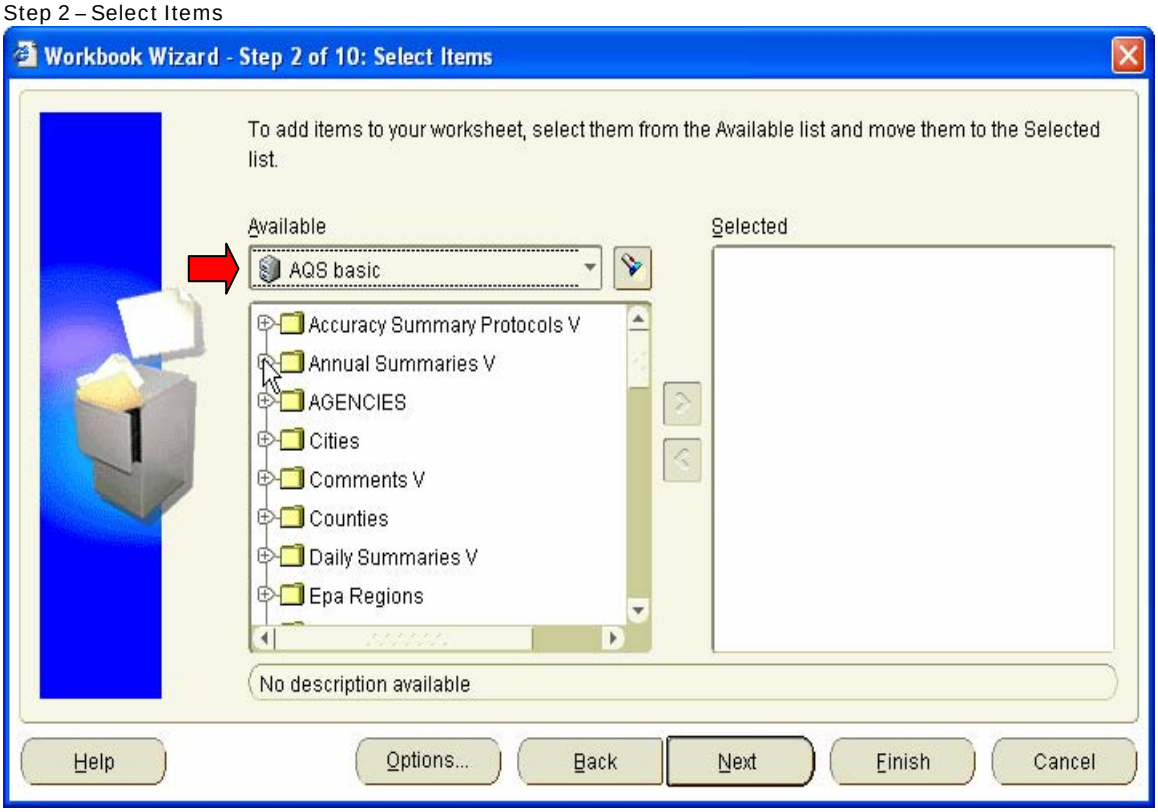


Figure 17

The first thing to look at on this step is the name displayed under "Available". If you do not see "AQS basic", use the selection drop-down list to select it. This is the business area. You may have access to more than one business area, so be sure the correct one is showing. The folders available in the selected business area are shown in the window below it. The available folders are ***not*** the same for all the business areas.

You can scroll through the folders in the business areas to find the folders likely to contain the items needed for the workbook. (You may want to refer to the data models in chapter 1 or the Data Dictionary.) Clicking on the "+" icon beside a folder name will generate the list of items within that folder.

If you cannot find the folder with the item you need, the search option may help. Click on the search light icon () beside the business area name and provide what information you can to find the item. For example, knowing you need a date for when sampling began but not the folder containing it, you might provide "date" in the search box to see all the items in the business area with "date" as part of the item name. (Be forewarned, there are a lot of "date" items.)

For this workbook, scroll down to the "Monitors V" folder. Expand the folder to see the items in it. The state code, county code, site ID, parameter code, and POC are needed.

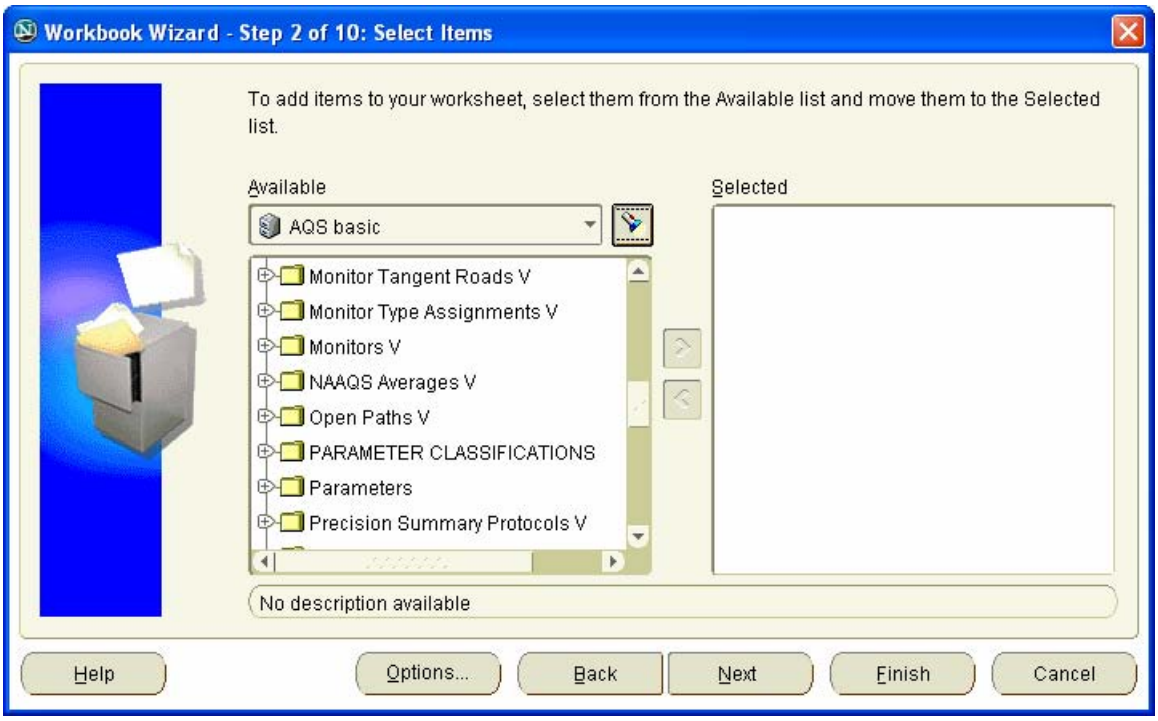


Figure 18

Items are added to a worksheet by highlighting them and moving them with the Move button to the "Selected" box.

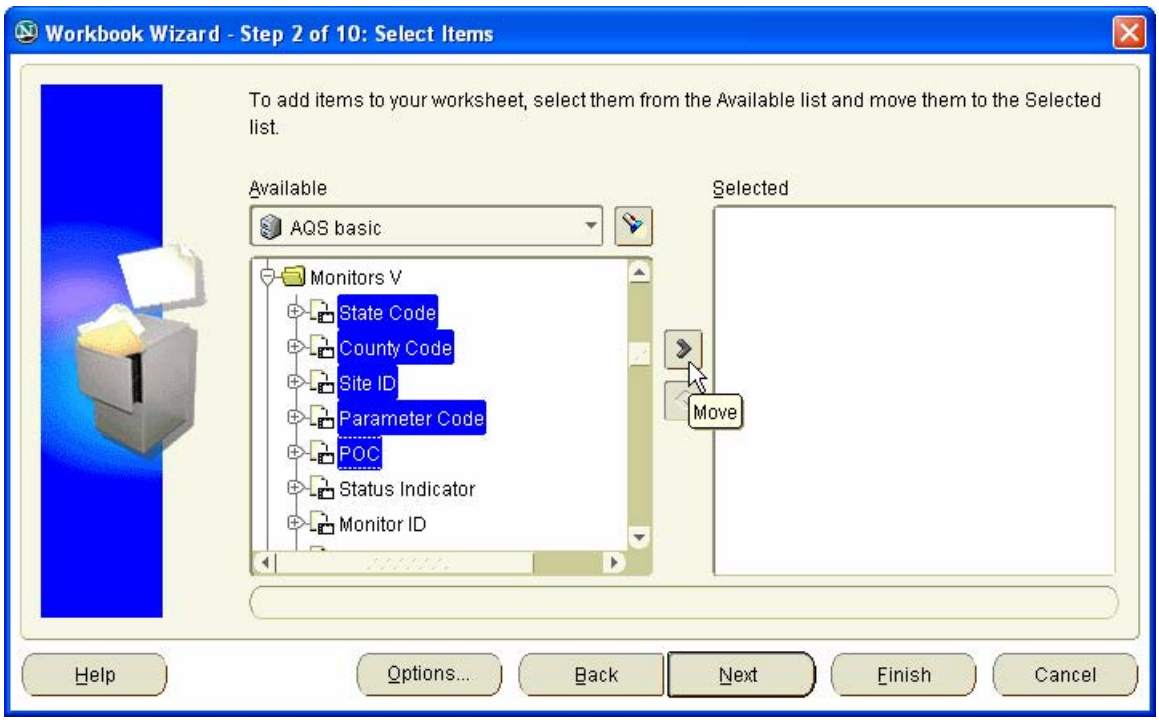


Figure 19

Once items are selected from a folder, only folders with a direct link to previously selected folders are available. In this example, once items are selected from "Monitors V", the "Open Paths V" folder is not available. (Open paths are linked to sites, not monitors.)

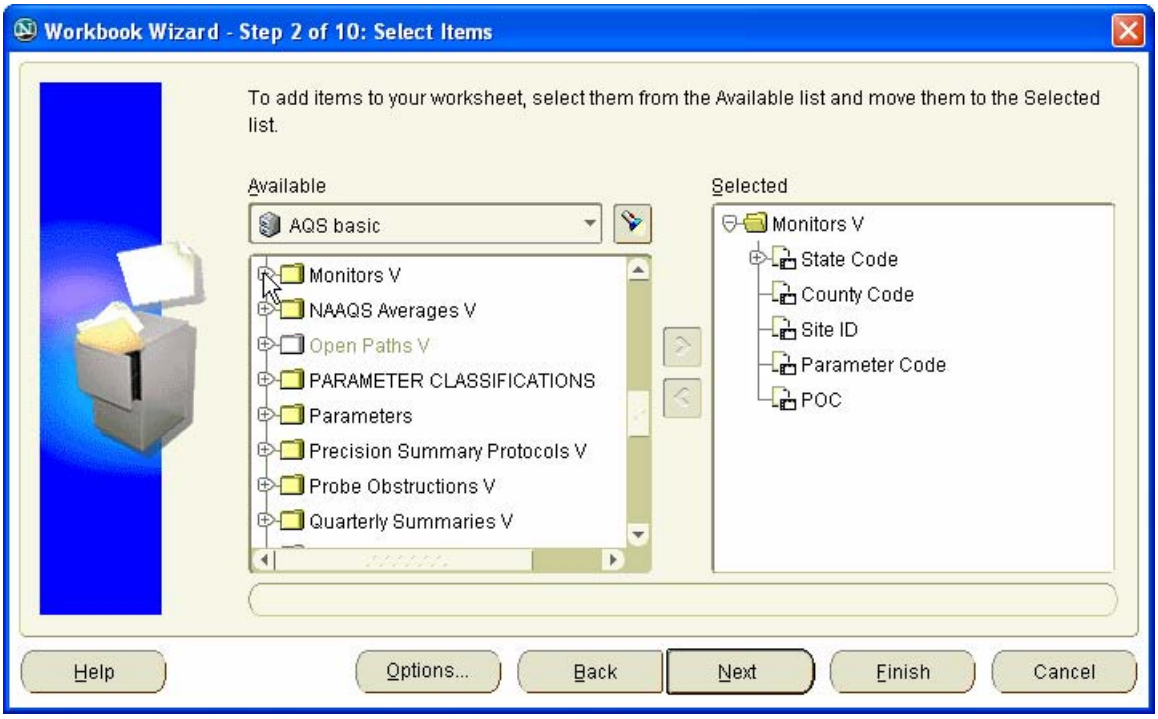


Figure 20

"Sample Periods V" contains the starting and ending sampling dates for monitors.

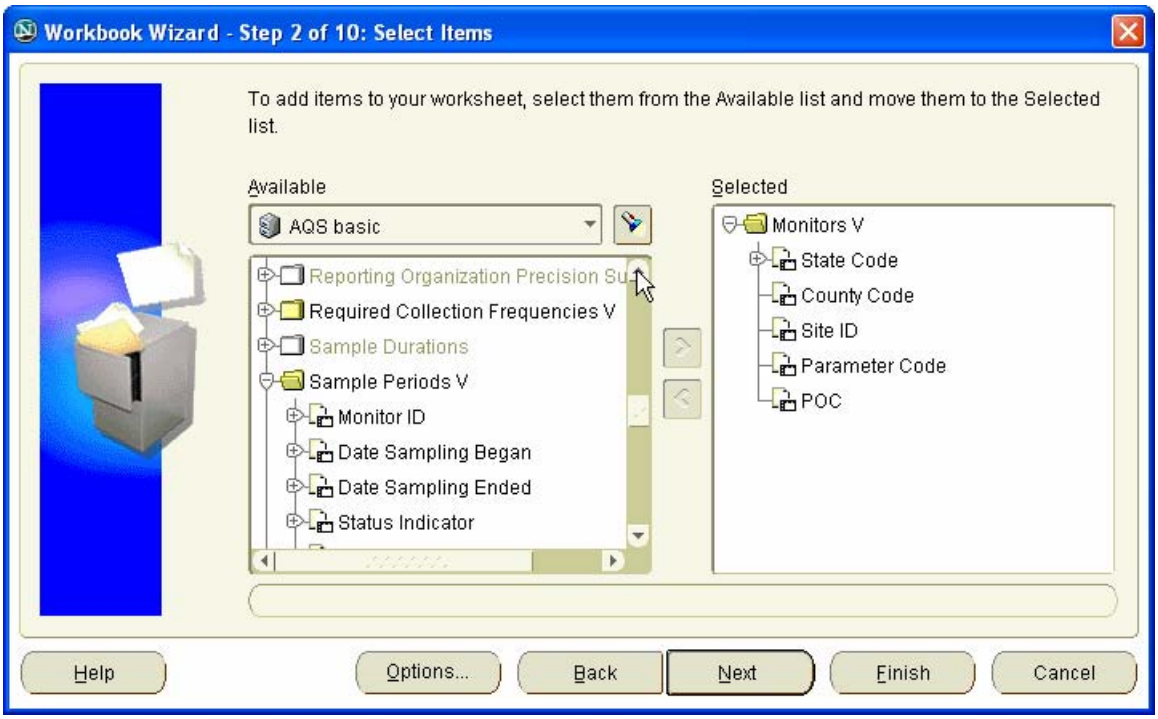


Figure 21

The "States" folder has the state abbreviations. Move these items to the selected box.

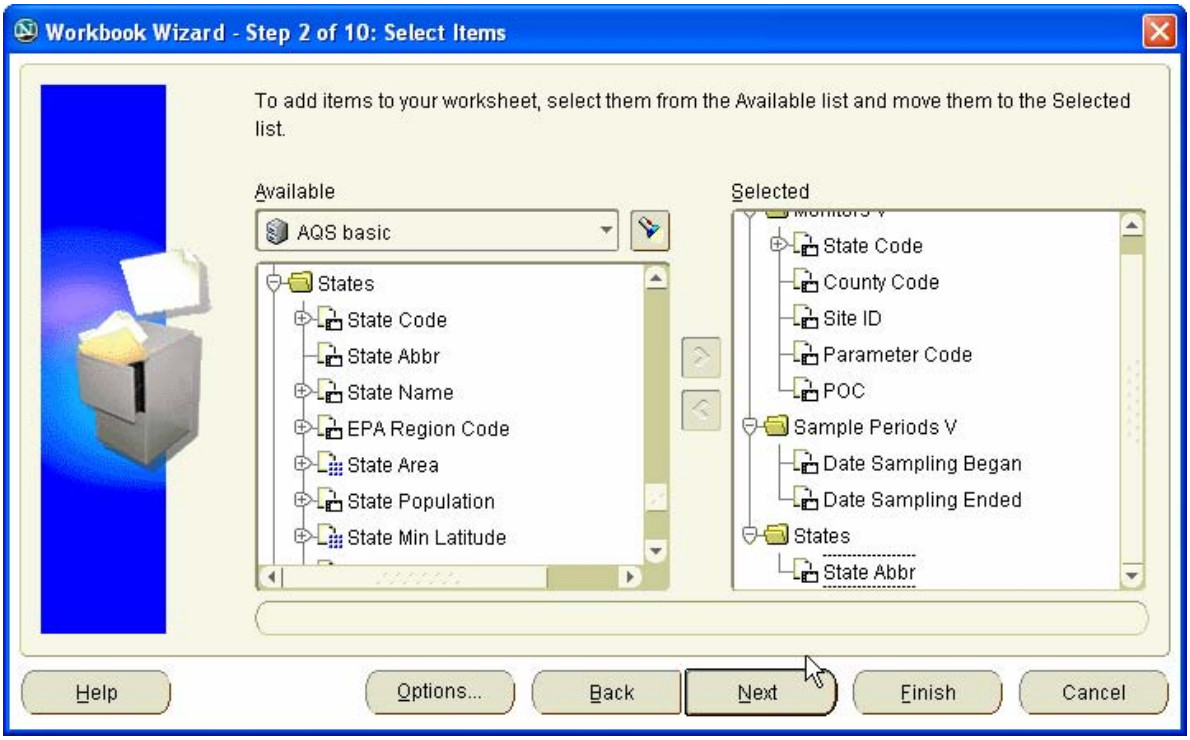


Figure 22

Click Next to proceed.

Step 3 – Table Layout

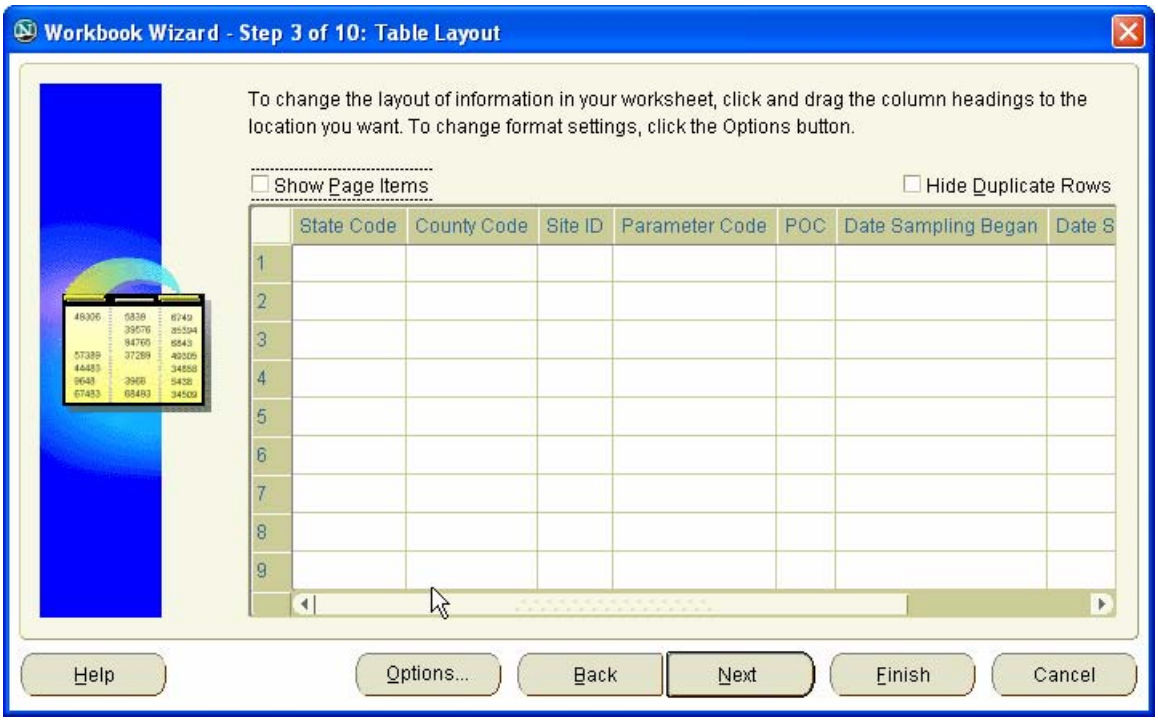


Figure 23

Use the Table Layout screen to organize the columns of the worksheet. Often the final layout changes after the first results are seen. For this example, the State Abbreviation should be the first column. Scroll to the right to see all of the columns, then click and drag State Abbrev over.

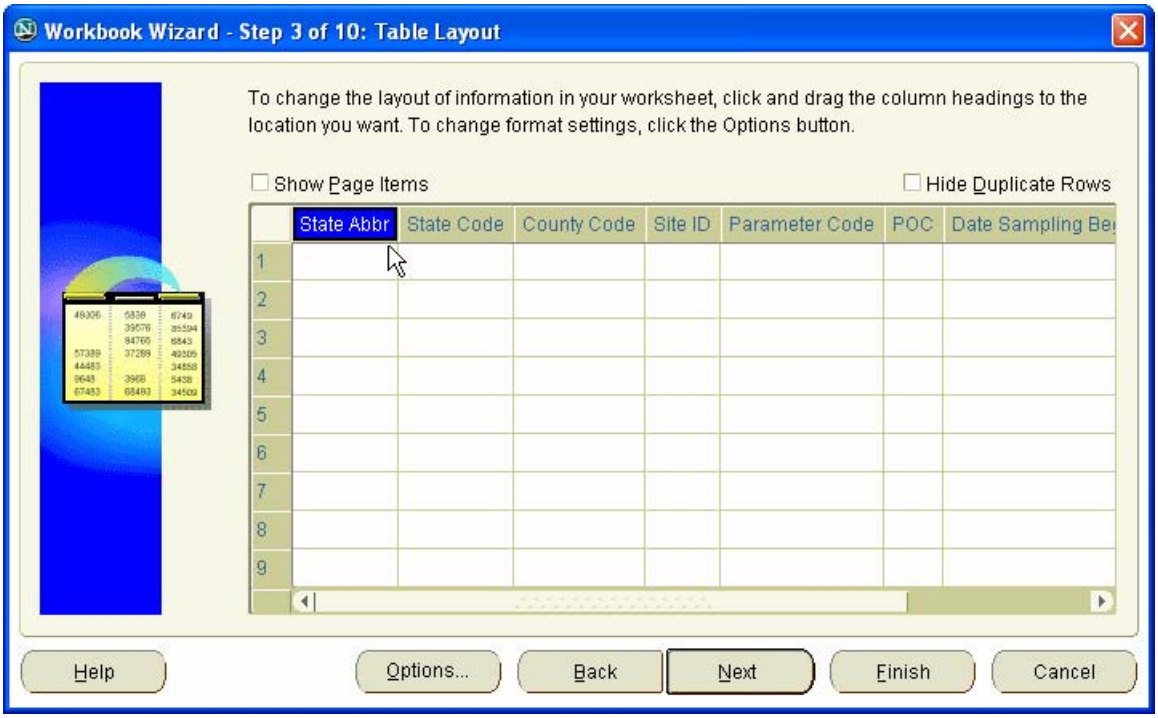


Figure 24

Click Next to proceed.

Step 4 – Format

Use step 4 to modify the format of column headers or data.

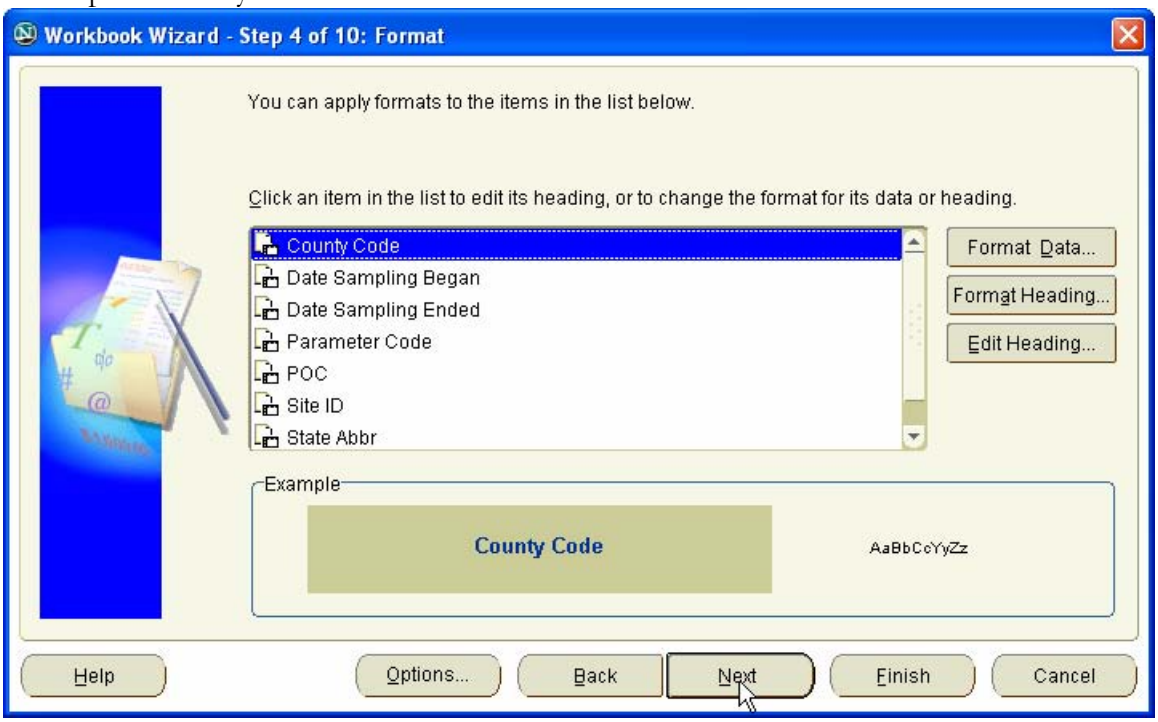


Figure 25

Many times the heading of a column is much longer than the data in the column. The "Wrap words in cell" option allows the column size to be squeezed down without losing any of the information.

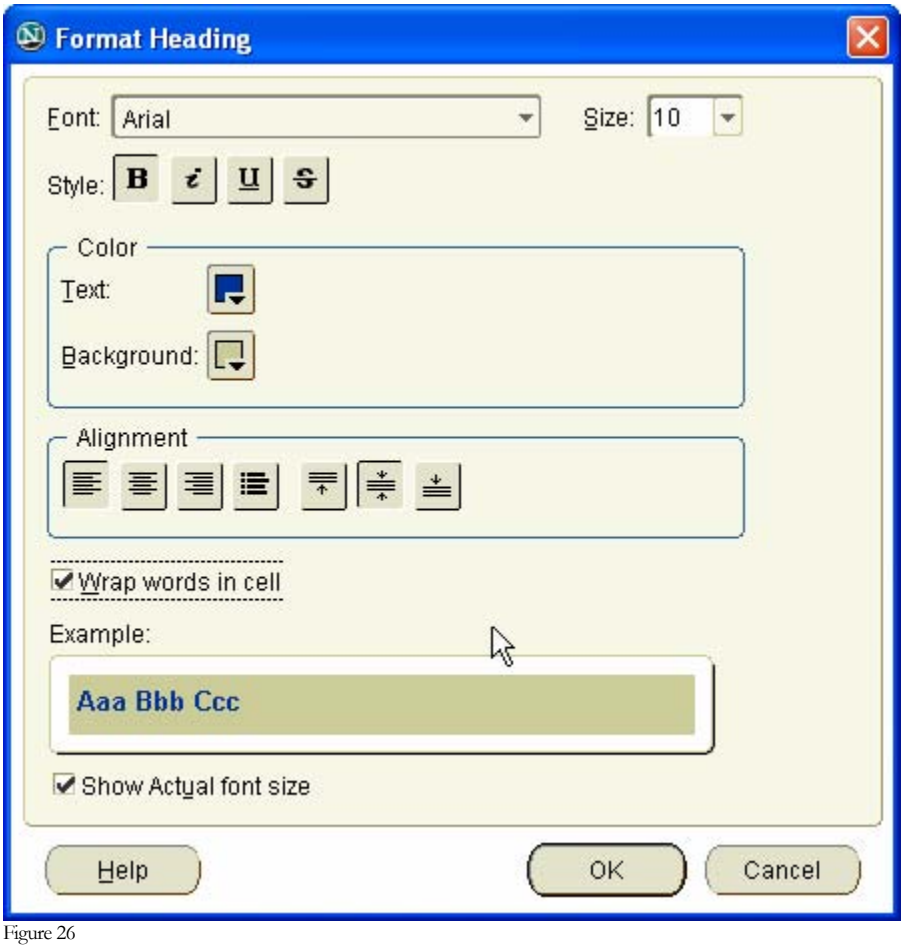


Figure 26

Data formatting also includes the special formatting for items defined as numbers.

Click Next to proceed.

Step 5 – Conditions

Conditions, or filters, can greatly reduce the amount of data retrieved for your workbook. Always try to focus on just the data you need. Even when you know you'll be retrieving many rows of data, you can use conditions to reduce the number of rows retrieved until you have the final format desired. (For example, you might limit your request to one state, county, site, etc.)

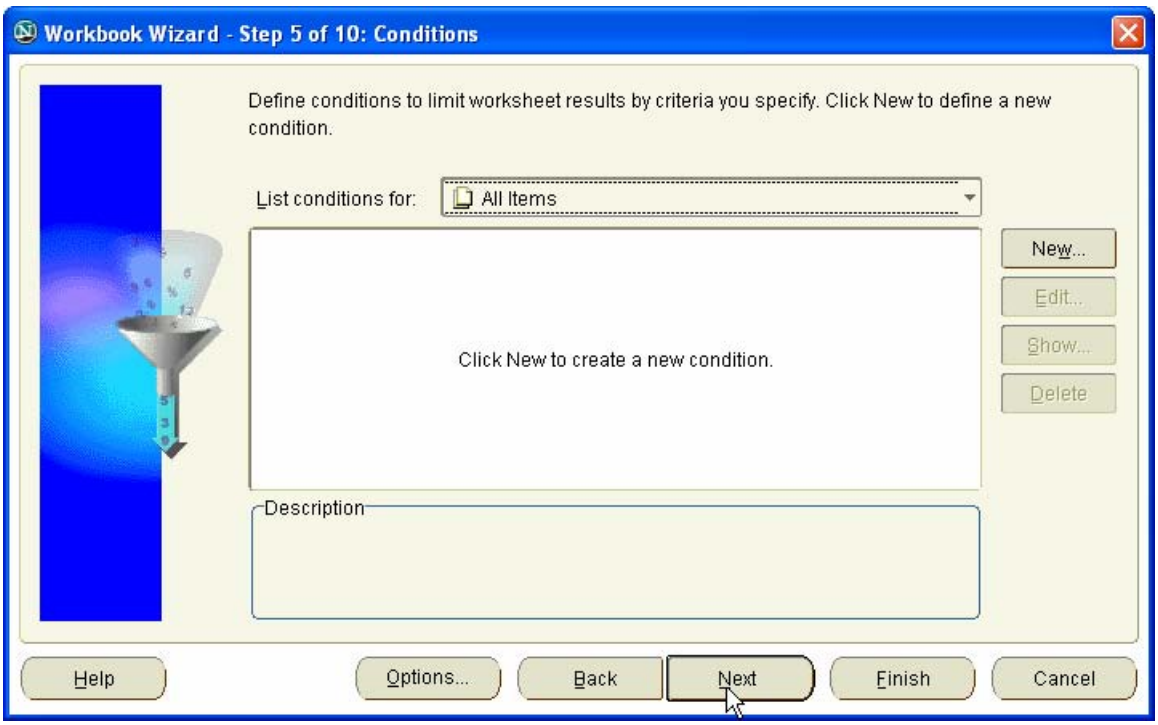


Figure 27

To find the rows for PM2.5 data, create a condition where Parameter Code equals 88101.

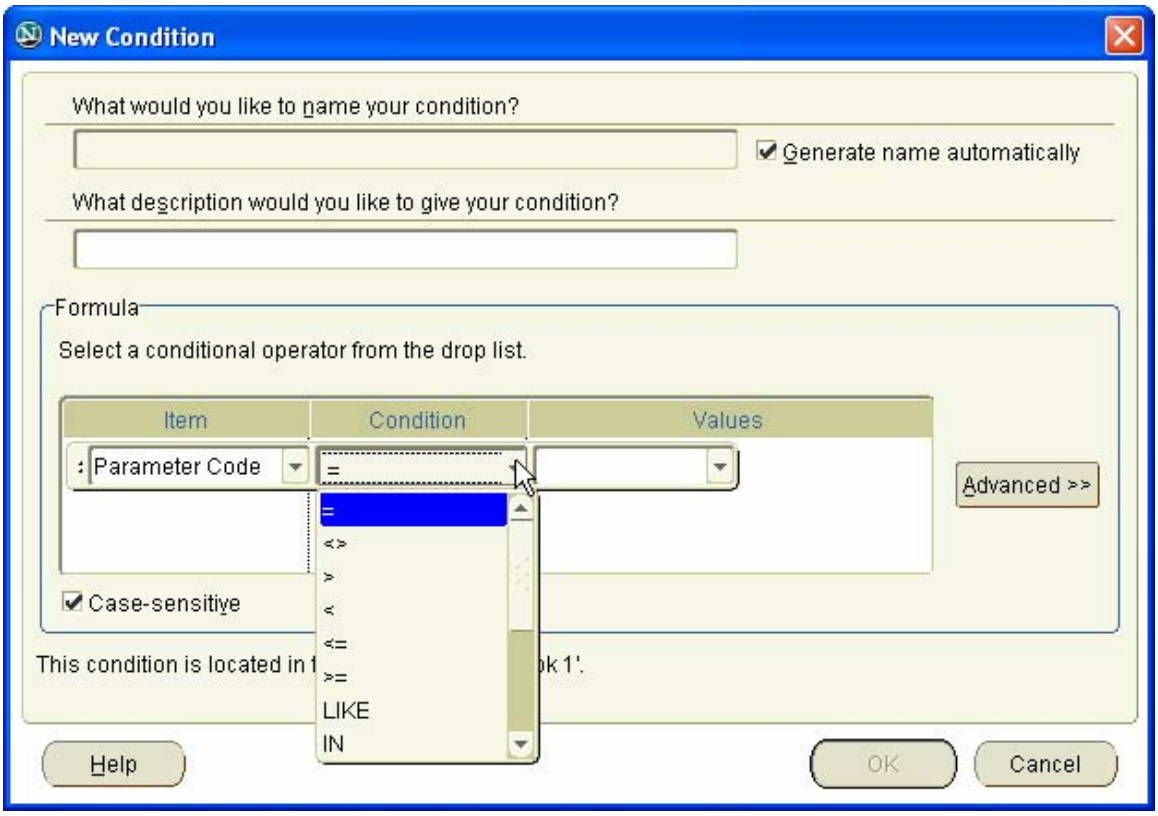


Figure 28

Add another condition for the year the sampling began equal to 2004.

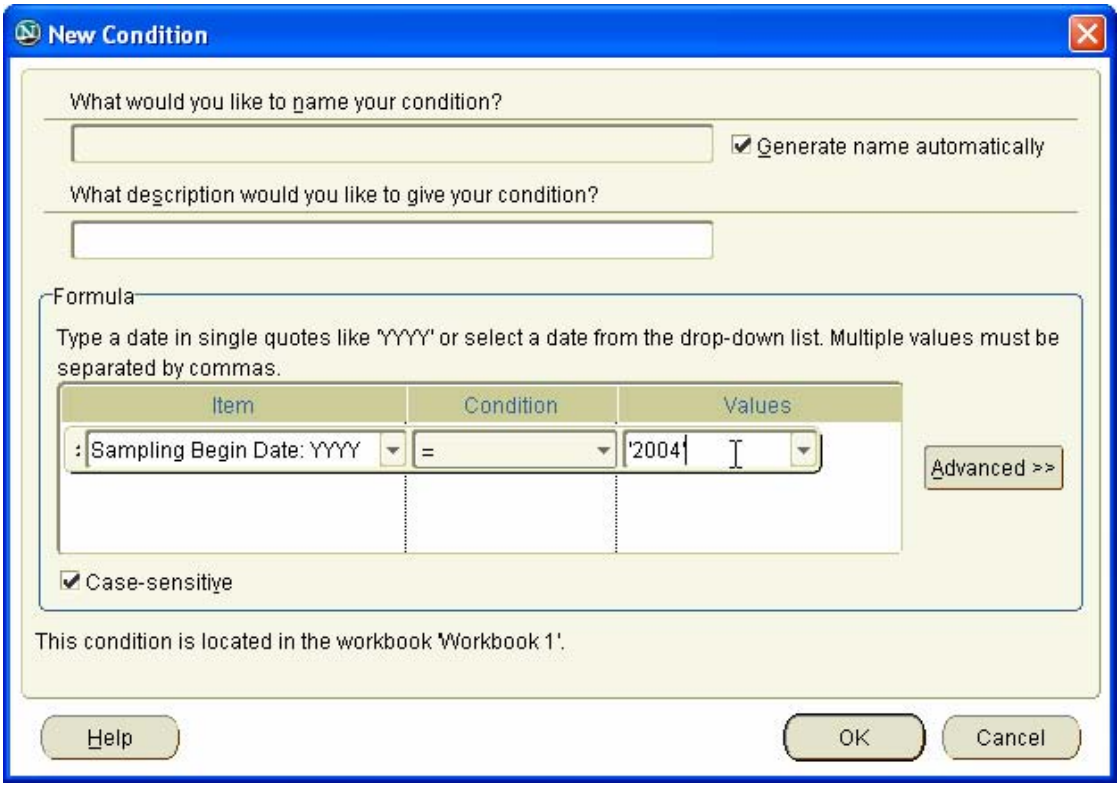


Figure 29

When all conditions have been created, click Next to proceed.

Step 6 – Sort

Discoverer offers two types of sorts: Normal and Group. Group sorts show all rows with matching values for the item sorted together in either ascending or descending order. Visually, it makes it easier to spot recurring values for a particular item.

In the example used here, a group sort is created on the State Abbr, followed by normal sorts on County, Site ID, and POC. Click on the Add button to add new items to the sort. You can always change the sort order later, but any group sorts are always done first.

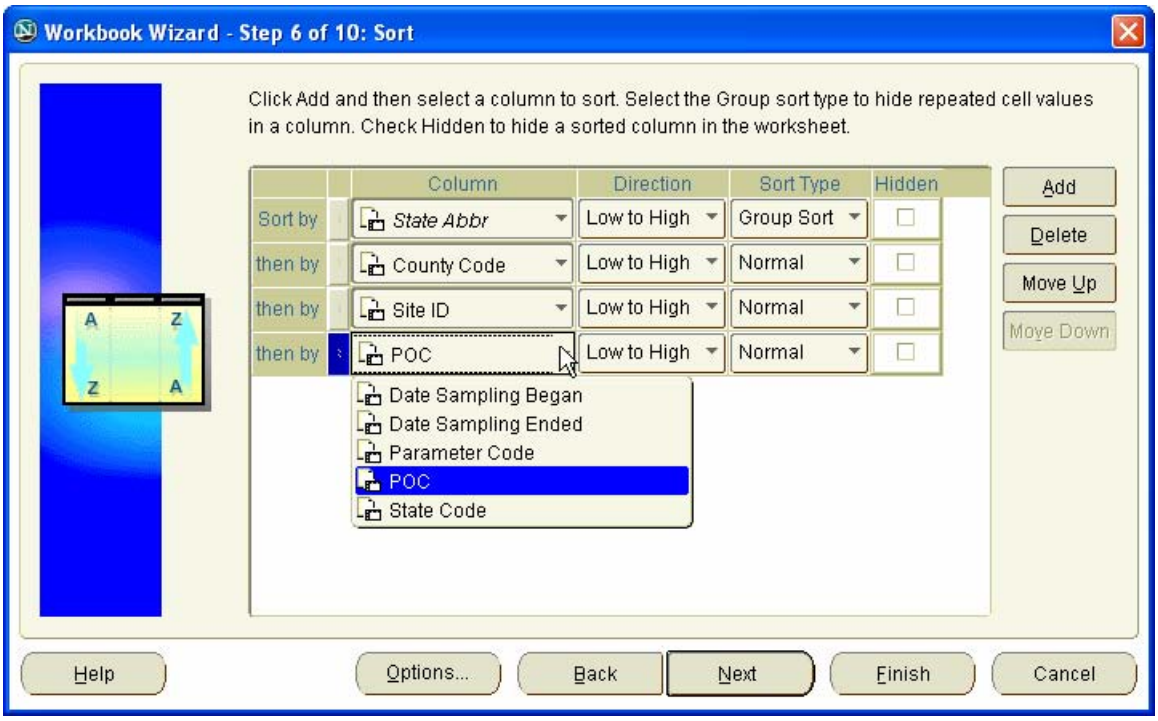


Figure 30

Click Next to proceed.

Step 7 – Calculations

Discoverer provides many different functions, including analytical and string functions. None are needed for the example used here.

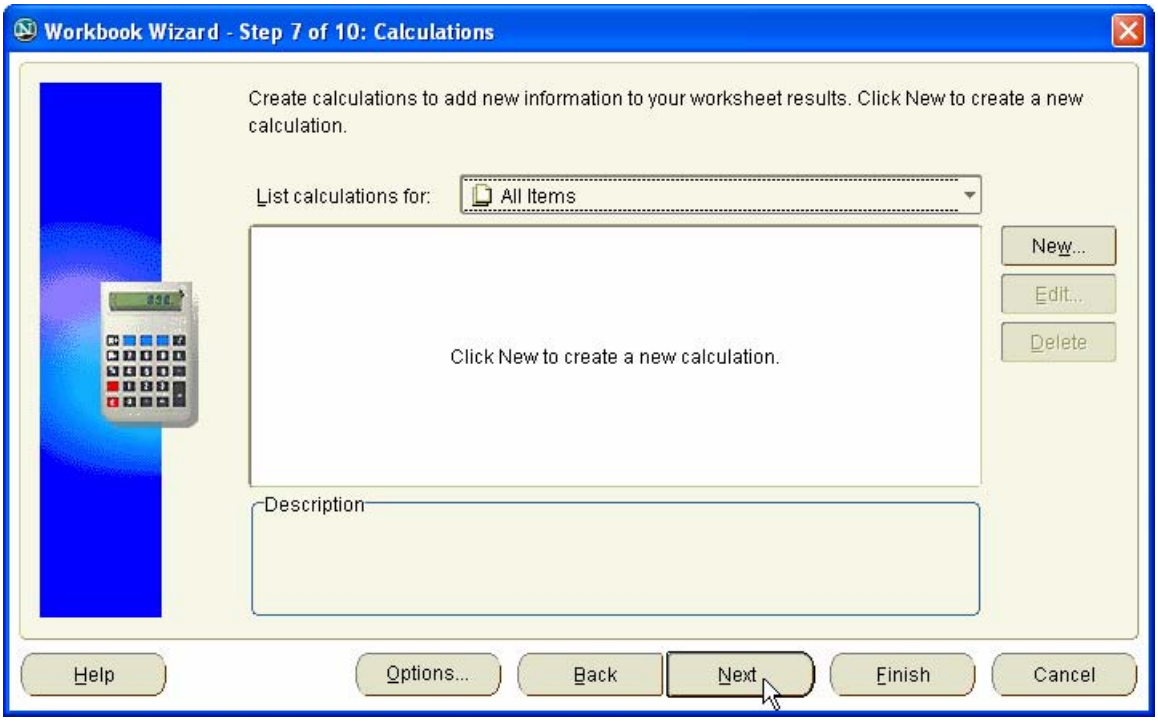


Figure 31

Step 8 – Percentages

Percentages are only for crosstab worksheets. They are based on data points.

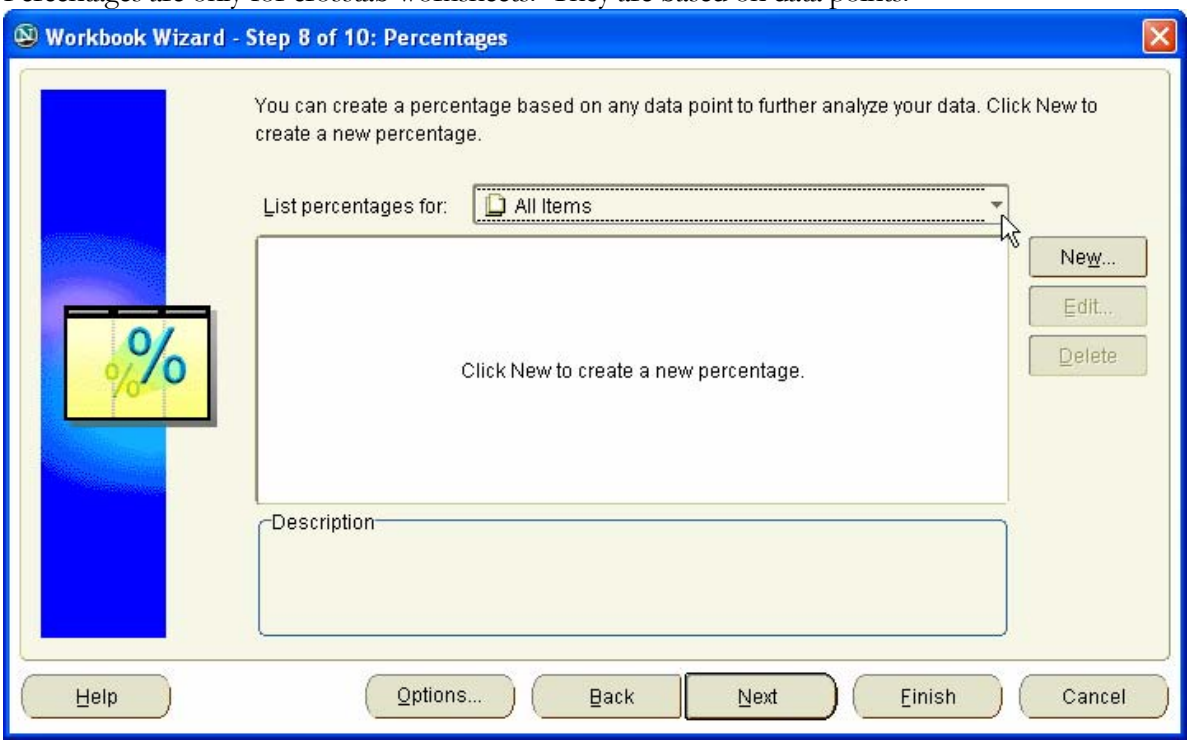


Figure 32

Step 9 – Totals

The workbook under construction needs to count the number of monitors by state. This count is simple to do with the group sort already in place.

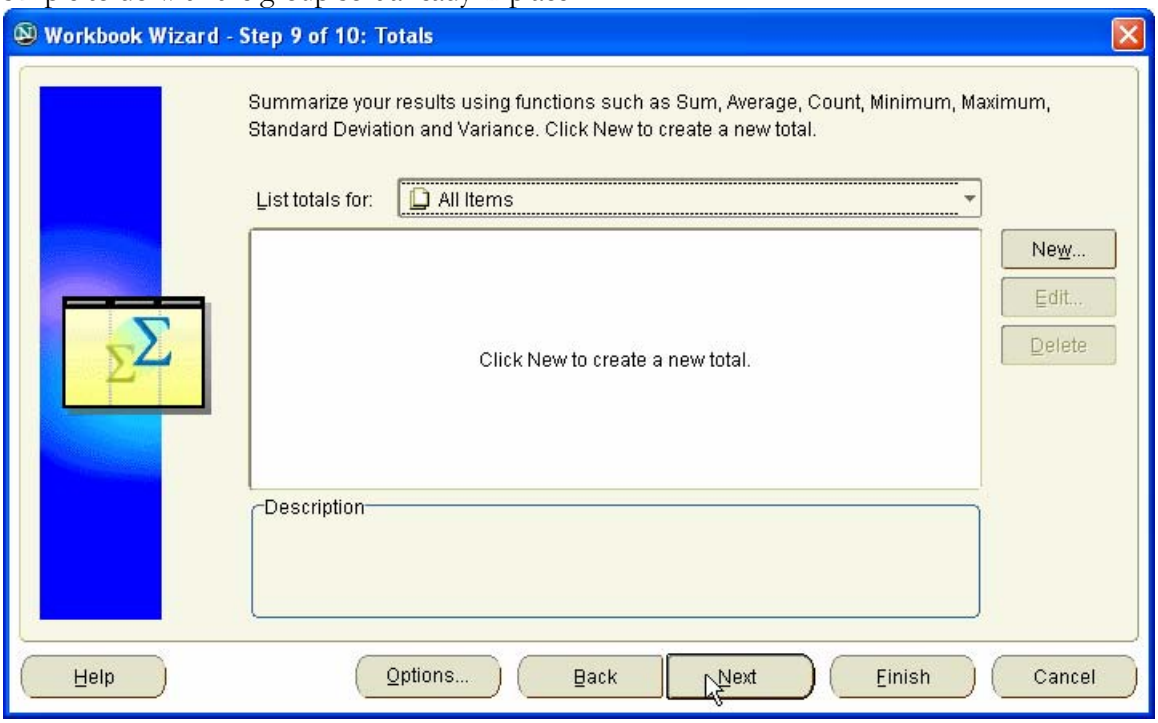


Figure 33

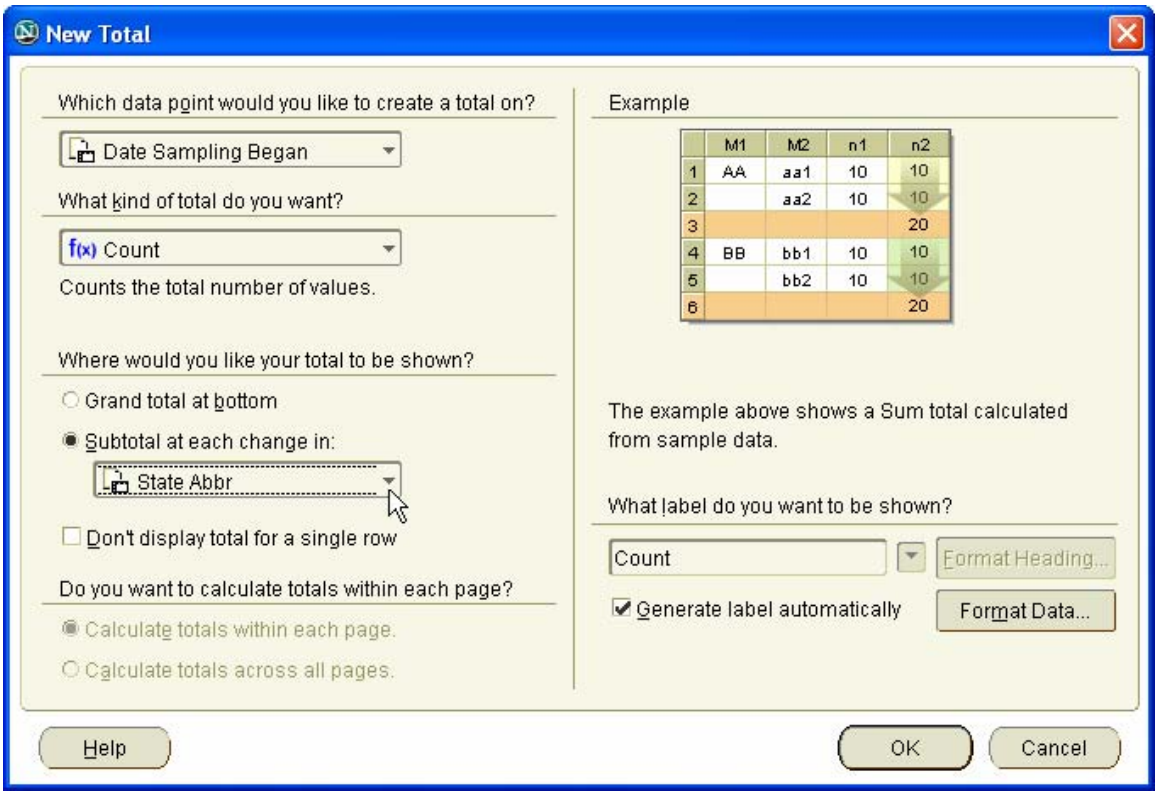


Figure 34

Adding a different color or shaded background to totals makes them easier to spot.

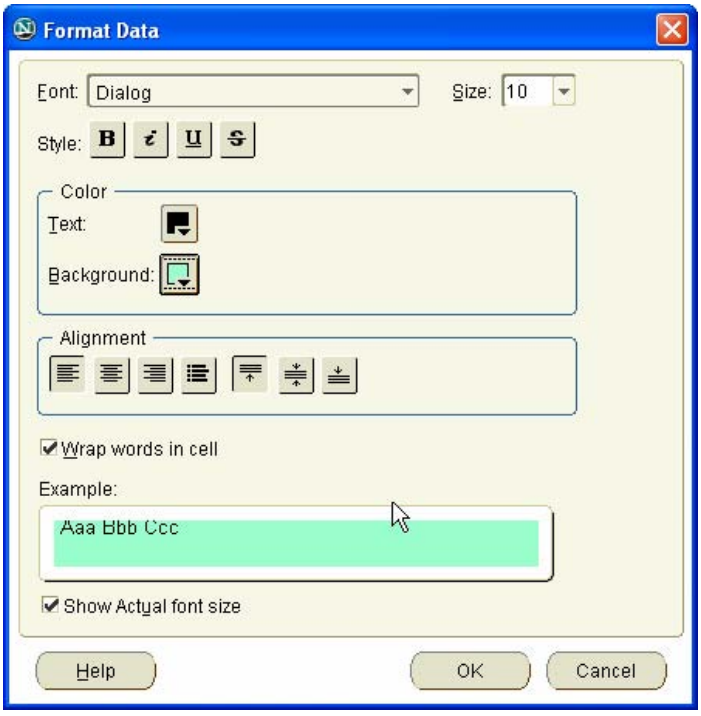


Figure 35

A grand total would also be nice – with a different label.

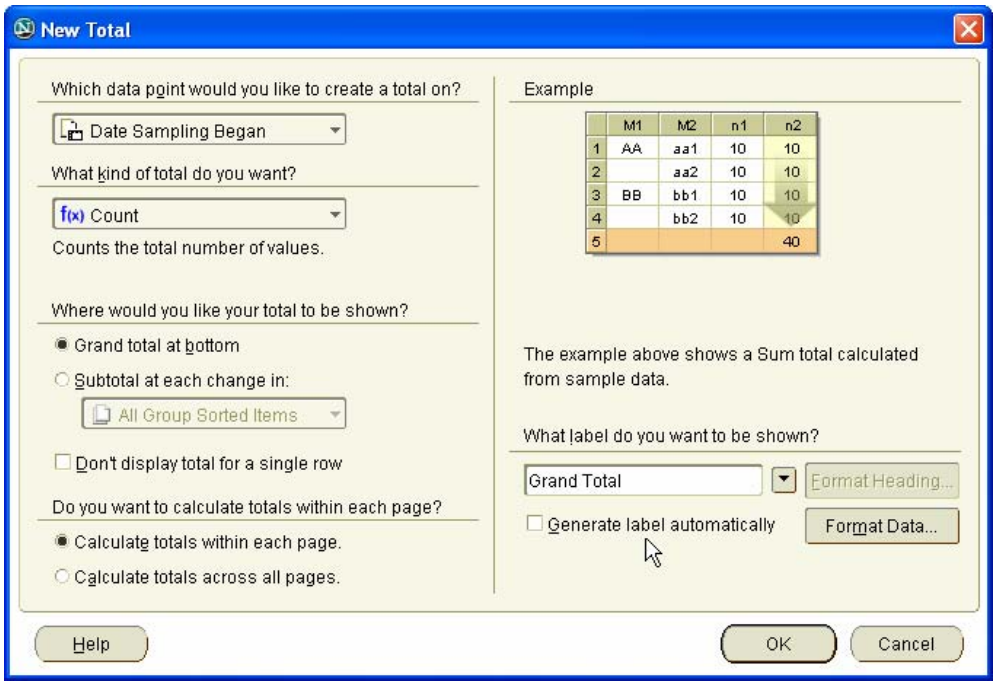


Figure 36

Step 10 - Parameters

Parameters in the workbook wizard are a way of customizing an existing workbook. Think of parameters in this sense as prompts, not as AQS parameters like PM2.5 or 88101. For example, this workbook could prompt the user for the year and use it in the condition instead of always using 2004.

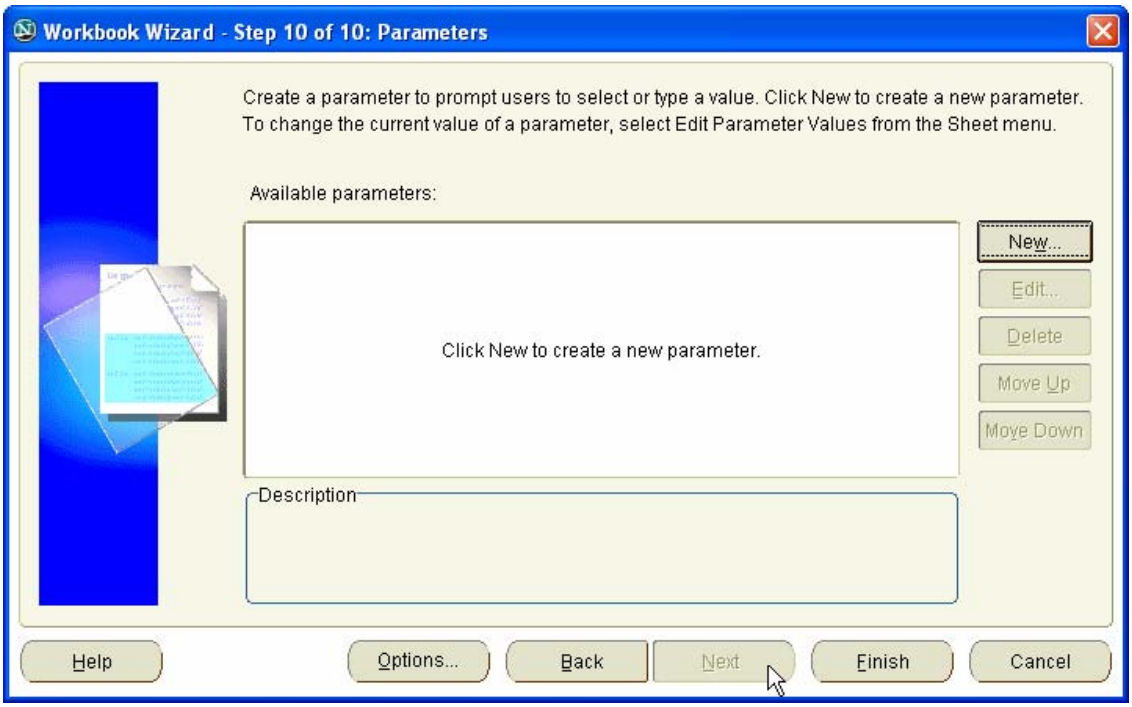
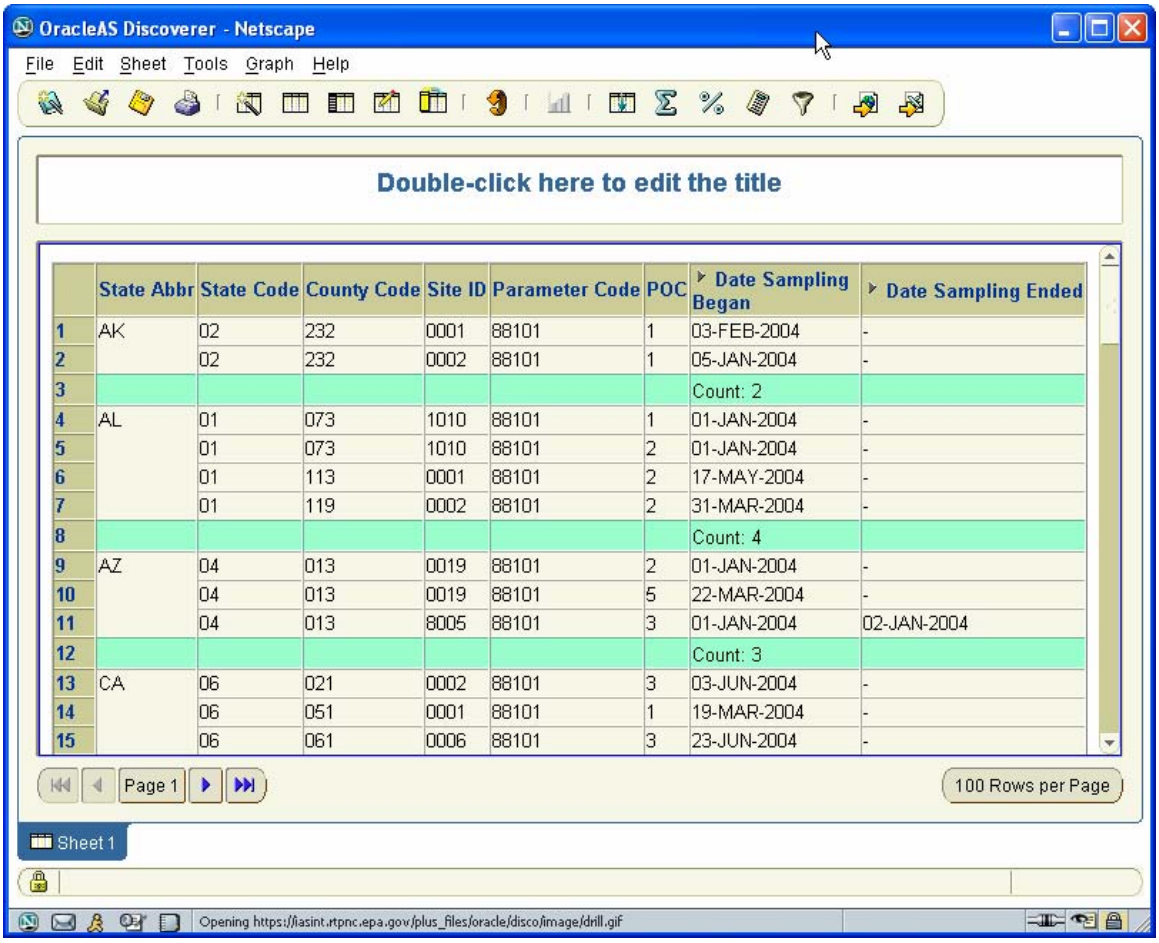


Figure 37

Click Finish to see the results.



	State Abbr	State Code	County Code	Site ID	Parameter Code	POC	Date Sampling Began	Date Sampling Ended
1	AK	02	232	0001	88101	1	03-FEB-2004	-
2		02	232	0002	88101	1	05-JAN-2004	-
3							Count: 2	
4	AL	01	073	1010	88101	1	01-JAN-2004	-
5		01	073	1010	88101	2	01-JAN-2004	-
6		01	113	0001	88101	2	17-MAY-2004	-
7		01	119	0002	88101	2	31-MAR-2004	-
8							Count: 4	
9	AZ	04	013	0019	88101	2	01-JAN-2004	-
10		04	013	0019	88101	5	22-MAR-2004	-
11		04	013	8005	88101	3	01-JAN-2004	02-JAN-2004
12							Count: 3	
13	CA	06	021	0002	88101	3	03-JUN-2004	-
14		06	051	0001	88101	1	19-MAR-2004	-
15		06	061	0006	88101	3	23-JUN-2004	-

Figure 38

Add the title by double-clicking in the title area.

Discoverer offers a few standard variables such as the date and time.

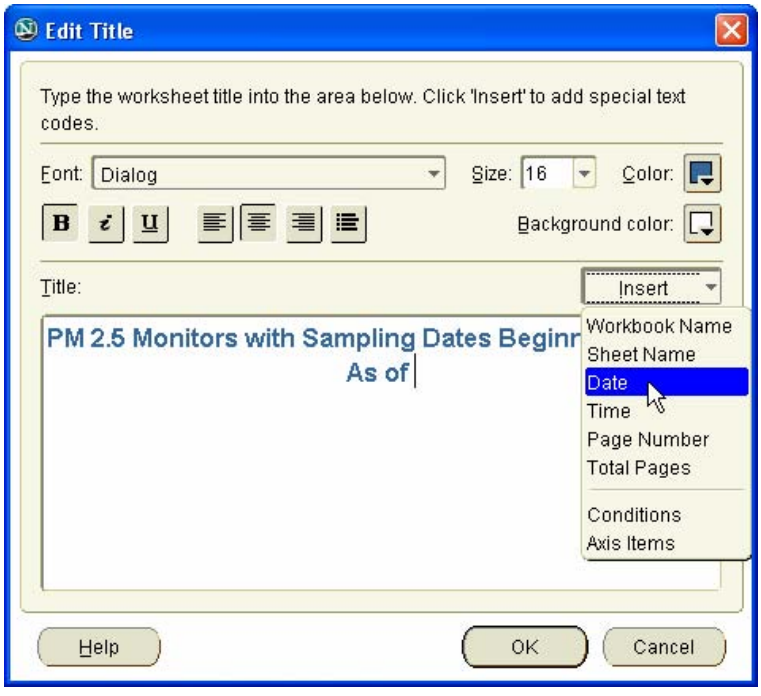


Figure 39

Jump to the last page and scroll to the bottom to see the grand total.

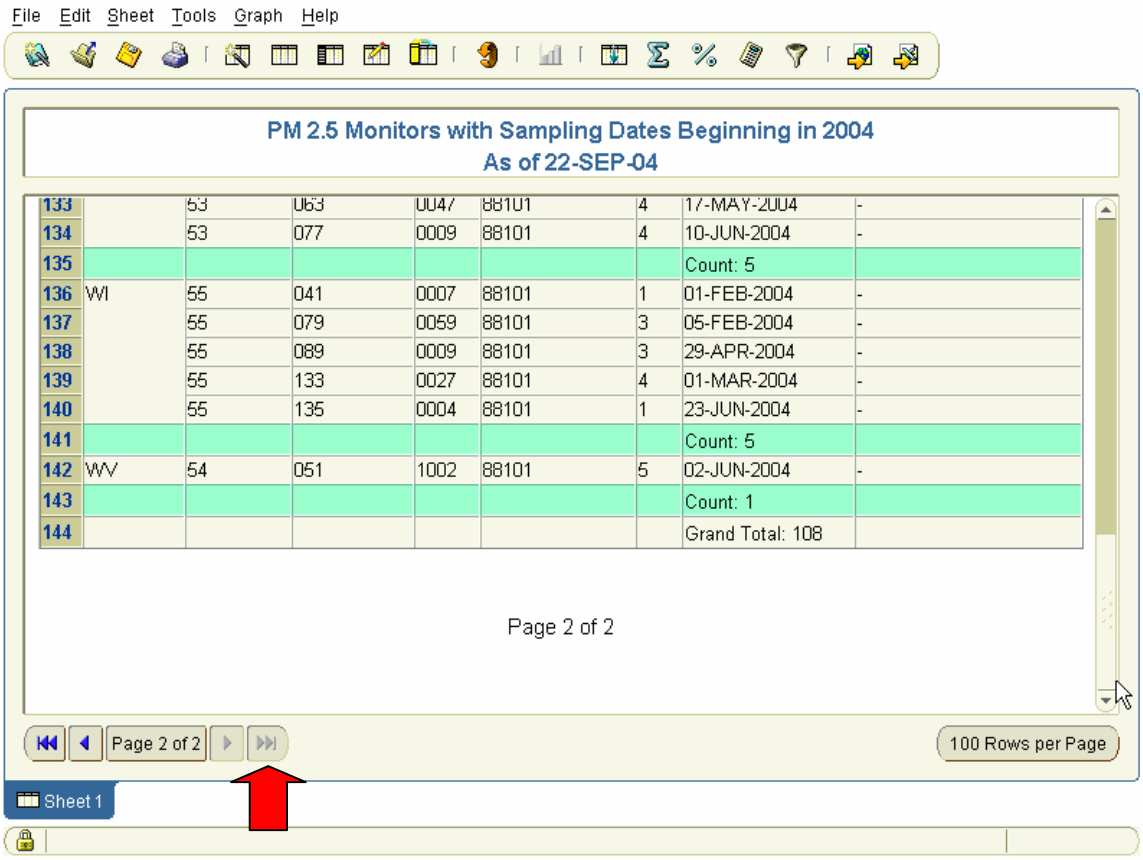


Figure 40

Save the workbook to the database if you expect to update the results at another date, or create a similar new workbook. Saved workbooks can be used, modified, and saved under the same or a different name on the database.

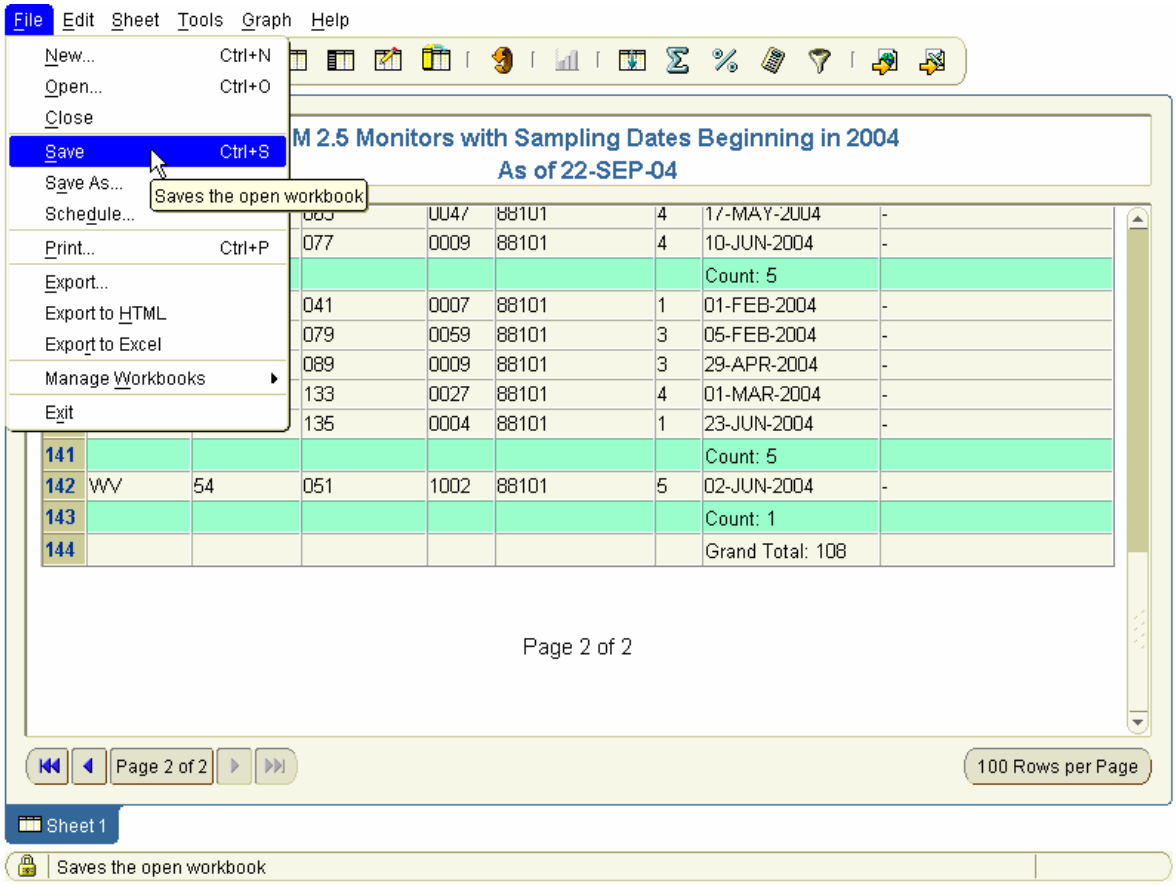
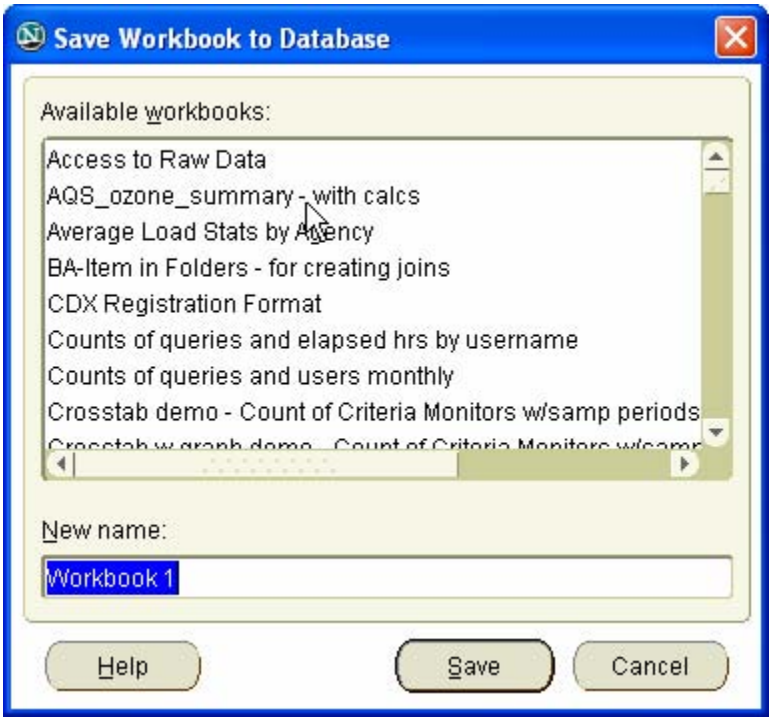


Figure 41



Provide a new name that will be meaningful and descriptive.

Figure 42

EXERCISE 3

Create a new workbook in the AQS Basic business area to present the following:

1. **List all of the sites in your state that have been terminated. For each row, show the state code, county code, site ID, date site created and date site terminated.**

2. **Add a title to the worksheet.**

3. **Include a count of the number of sites that have been terminated for each county and a grand total at the bottom.**

Chapter 5

Default Worksheet Settings

Discoverer offers many formatting options by default. You may change some of them; others are controlled by the Discoverer Administrator.

You reach these options from the Tools/Options menu.

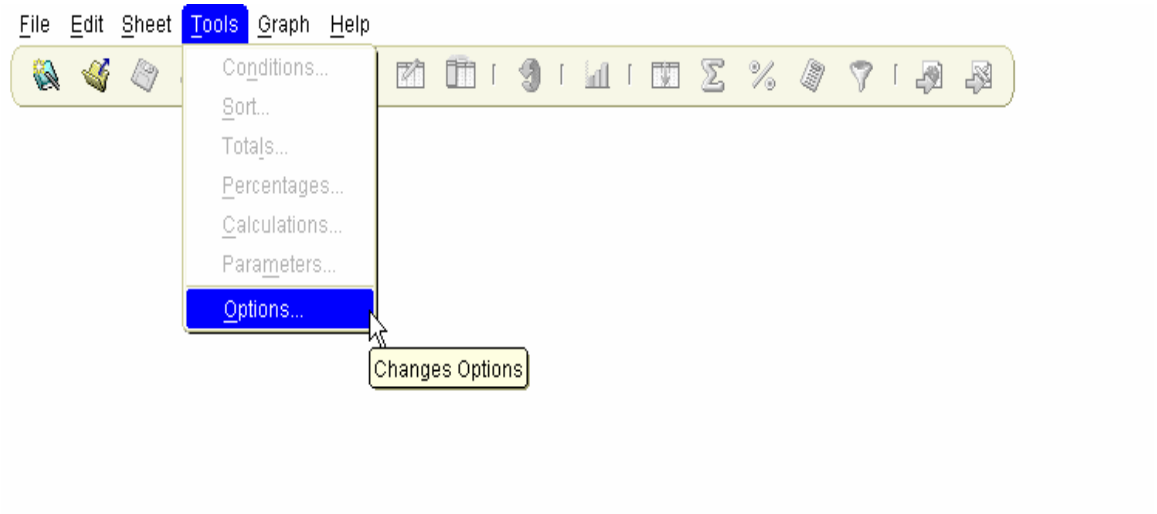


Figure 43

There are 5 tabs on the Options window:

General

Query Governor

Default Formats

Advanced

EUL

The General tab tells Discoverer what to do after opening a workbook, what to do with scheduled workbooks, and whether or not to show the wizard graphics.

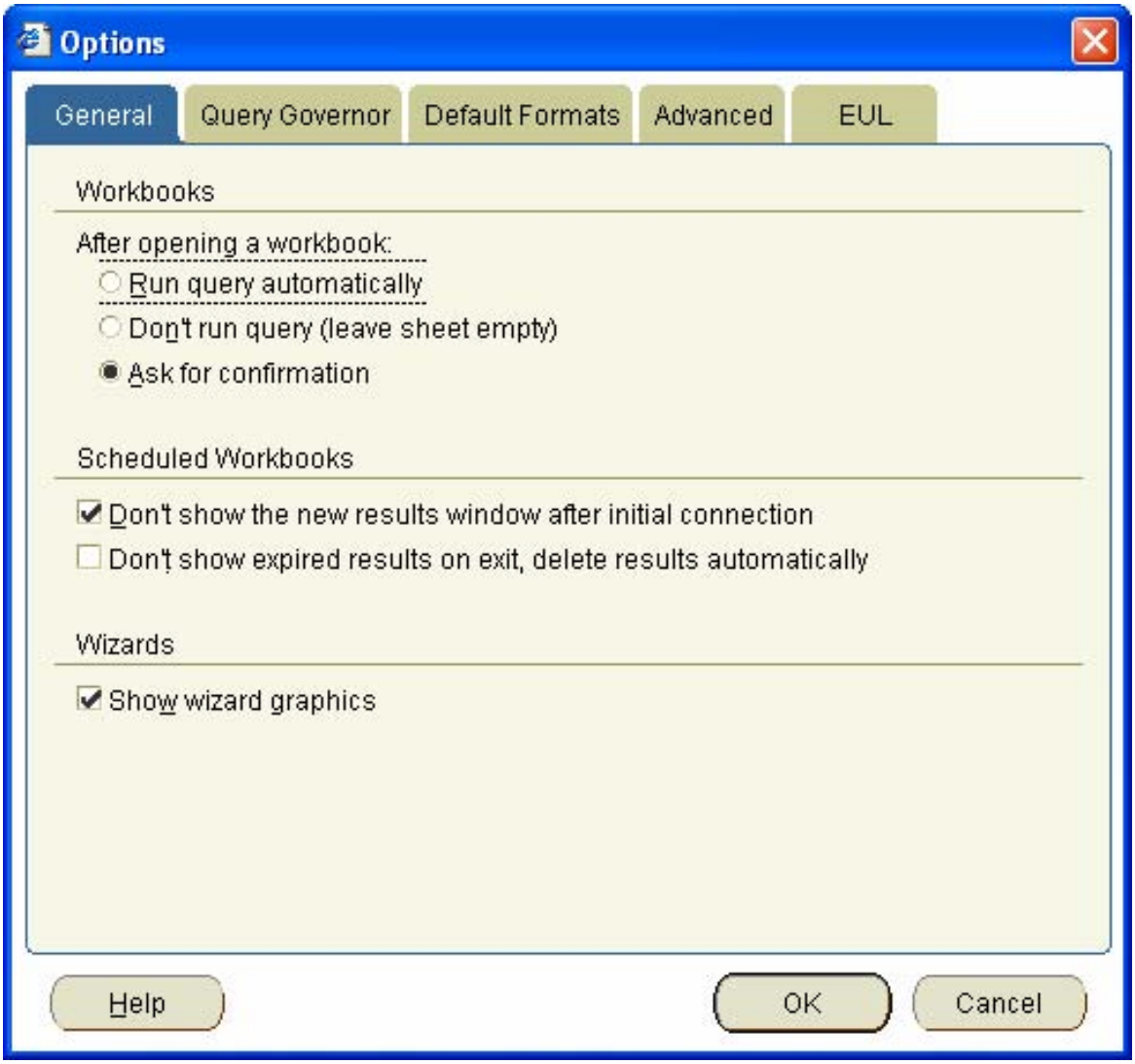


Figure 44

Asking for confirmation before running an existing workbook provides you with the opportunity to make changes to the workbook before you wait for results.

The Query Governor tab provides a place for performance thresholds you are willing to allow. There is an over-riding maximum run time of 30 minutes and 100,000 rows set by the Discoverer Administrator.

With experience you will know the number of rows per page you want to see. An advantage of using a smaller number such as about 20 usually means your column headings will be visible along with the data. A larger number makes more rows visible (with scrolling) on the screen at a time.

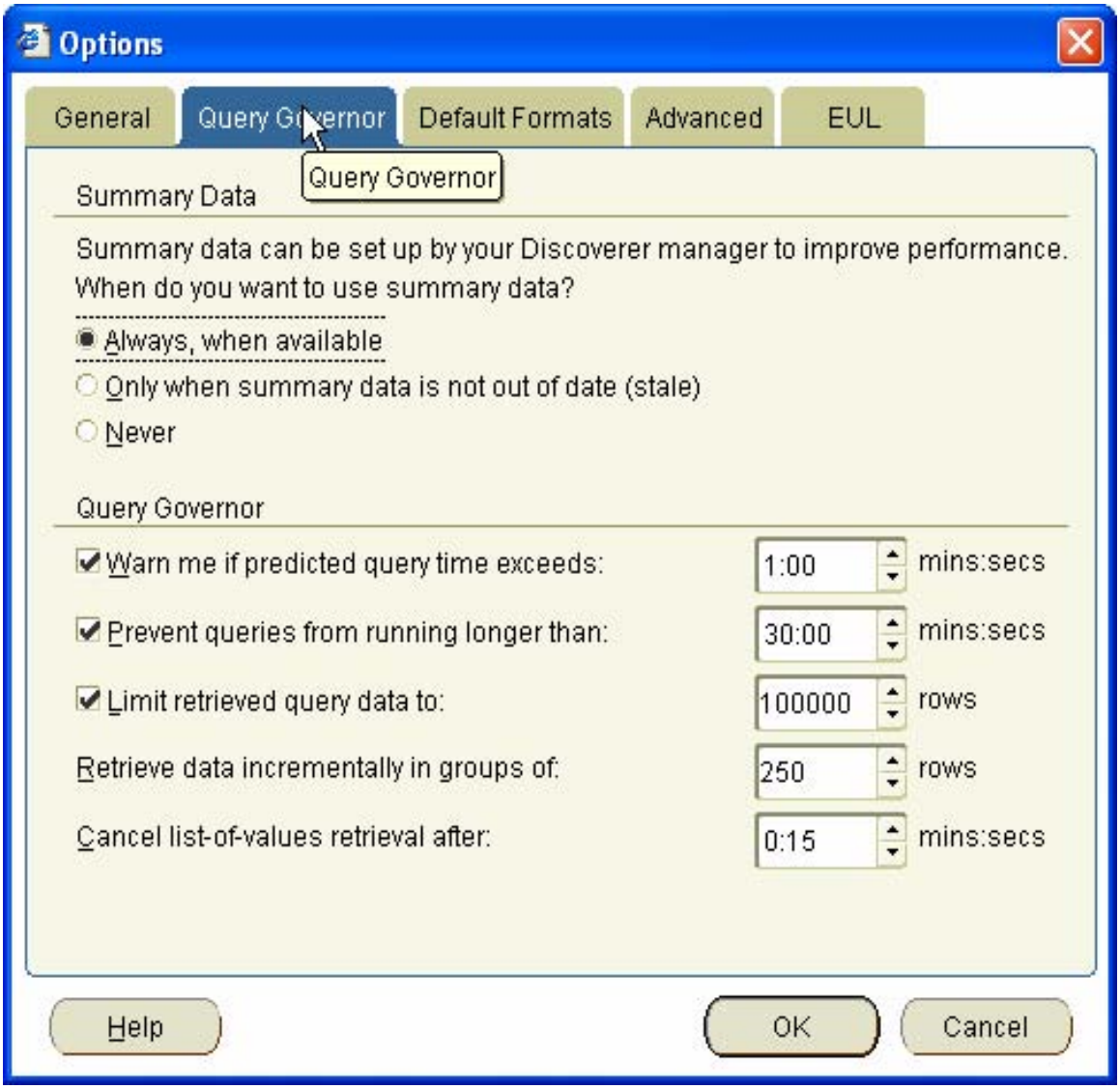

Options
General
Query Governor
Default Formats
Advanced
EUL
Query Governor
Summary Data
Summary data can be set up by your Discoverer manager to improve performance.
When do you want to use summary data?
Always, when available
Only when summary data is not out of date (stale)
Never
Query Governor
Warn me if predicted query time exceeds:
1:00
mins:secs
Prevent queries from running longer than:
30:00
mins:secs
Limit retrieved query data to:
100000
rows
Retrieve data incrementally in groups of:
250
rows
Cancel list-of-values retrieval after:
0:15
mins:secs
Help
OK
Cancel

Figure 45

Default Formats provide an easy way to make many parts of your workbooks look the same.

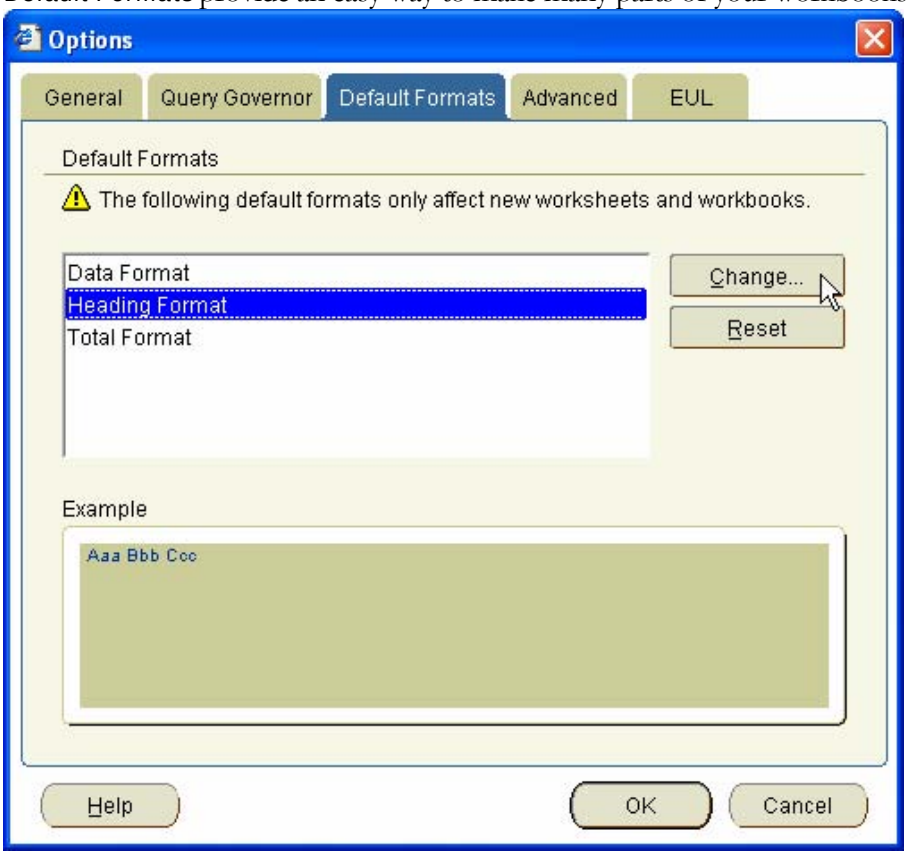


Figure 46

For example, you can direct Discoverer to use a certain font and size for all column headings.

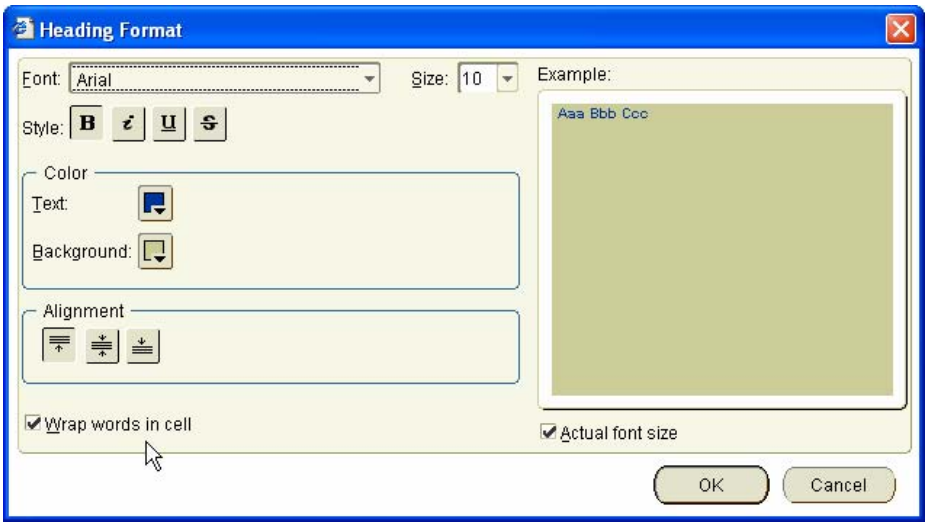


Figure 47

Chapter 6

Crosstabs, Graphs, and Output Options

The remaining options offered by Discoverer are explained in the documentation provided by Oracle Corporation. (See Chapter 3) Examples of the most used options are shown here.

The worksheet used in throughout this guide was duplicated as a crosstab and modified to show only the count of new PM 2.5 monitors in each state in 2004.

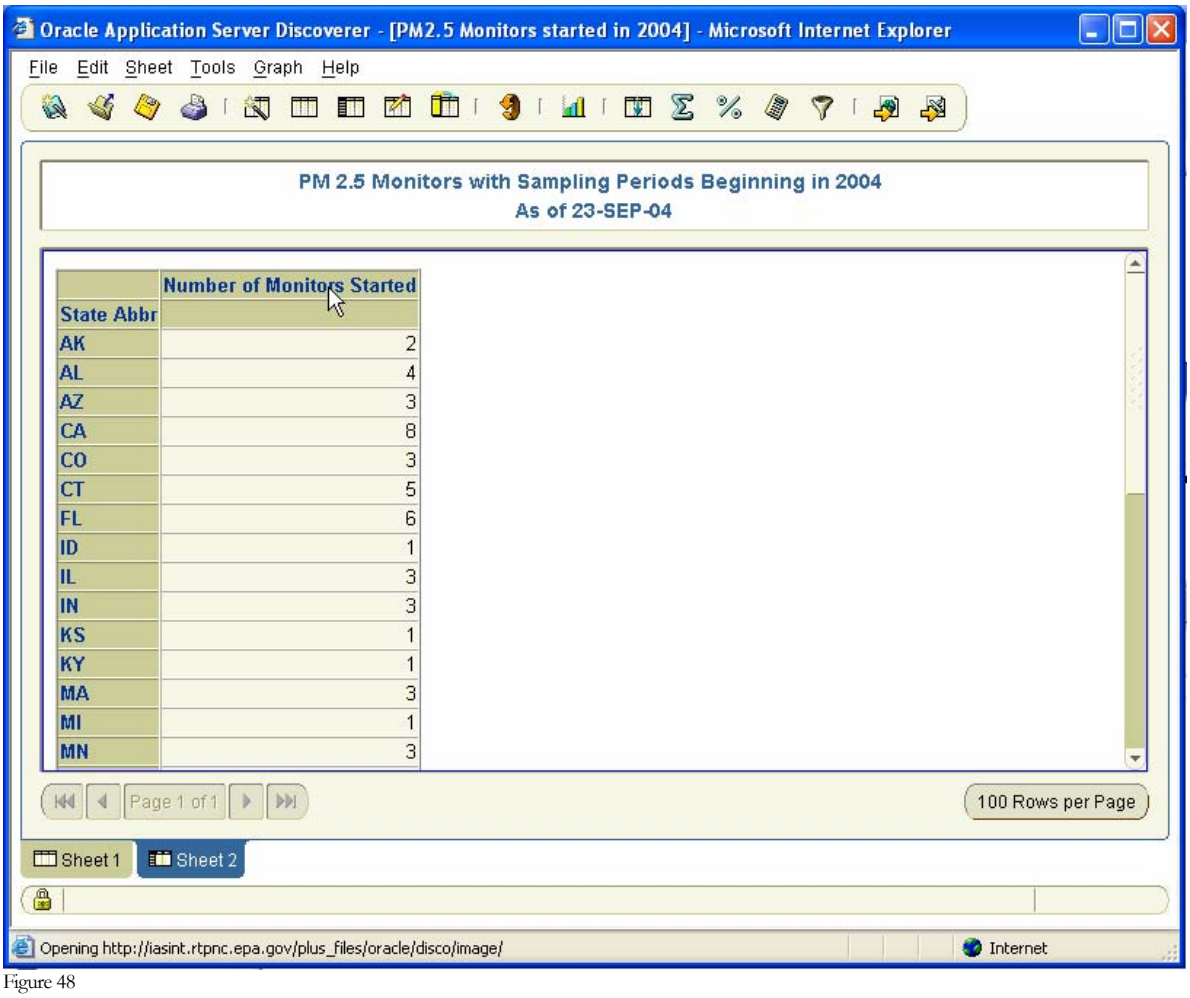


Figure 48

A graph of the crosstab was added. (A workbook named"PM2.5 Monitors started in 2004 with crosstab and graph" has been shared with all users. There are two worksheets in this workbook. The crosstab and graph are in the second worksheet.)

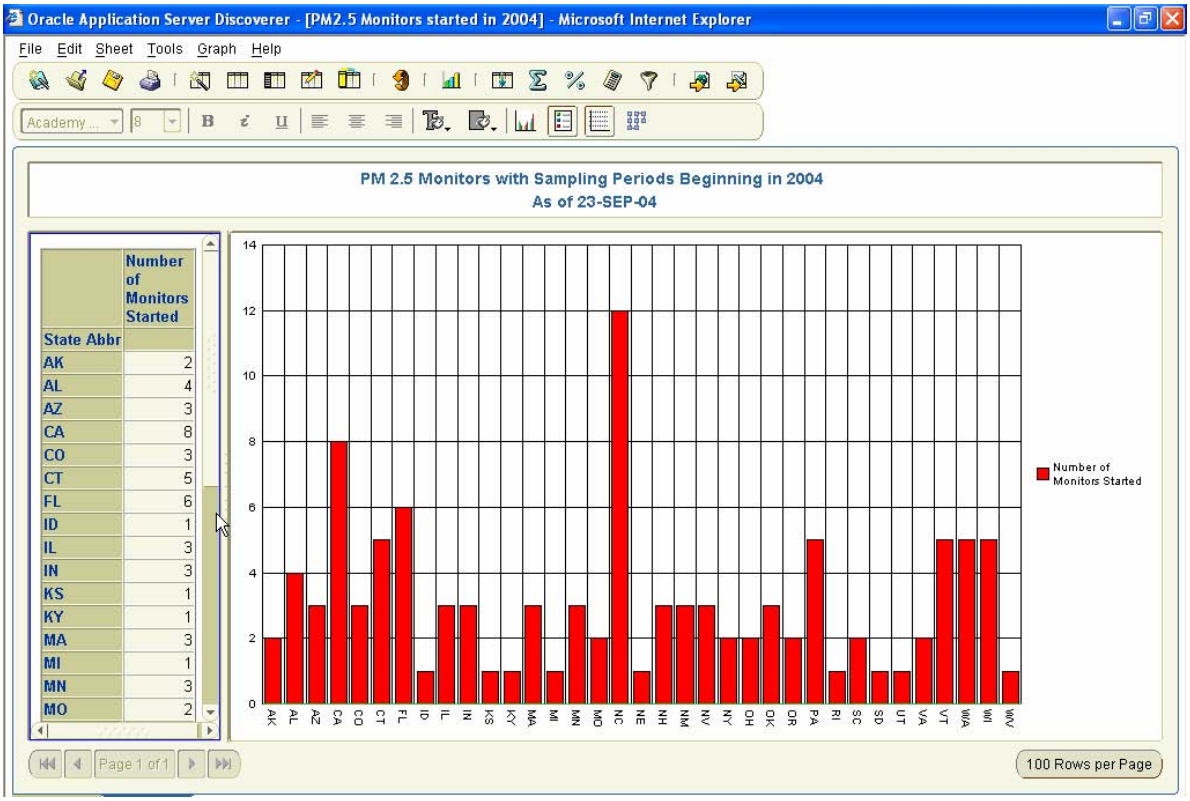
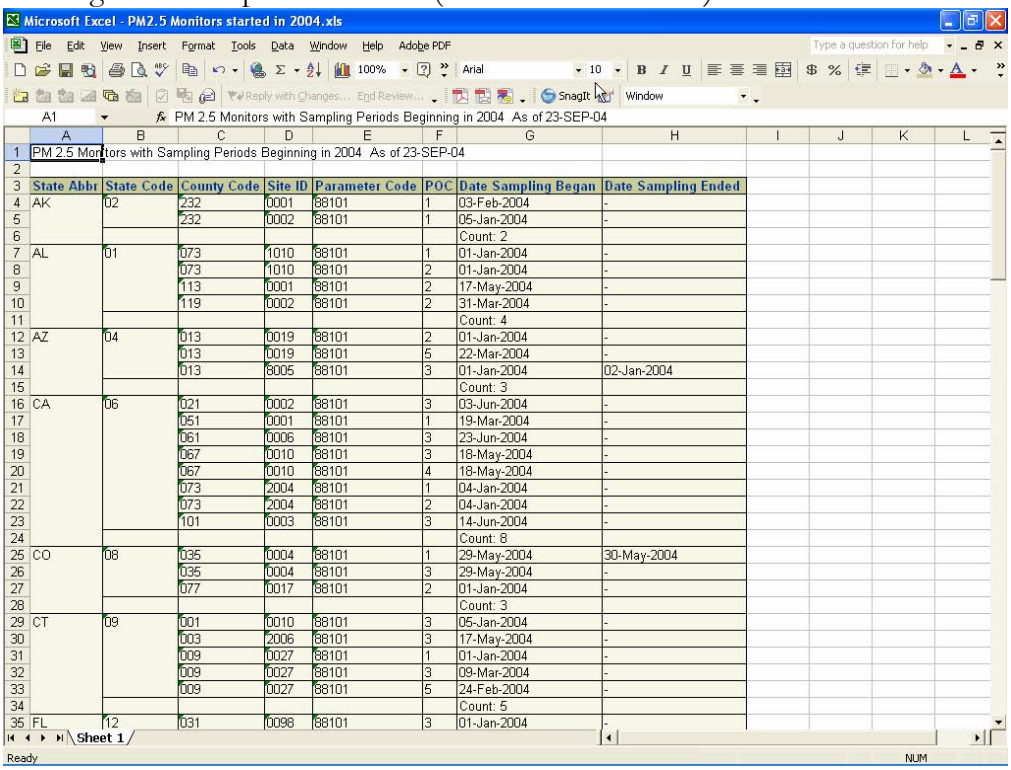


Figure 49

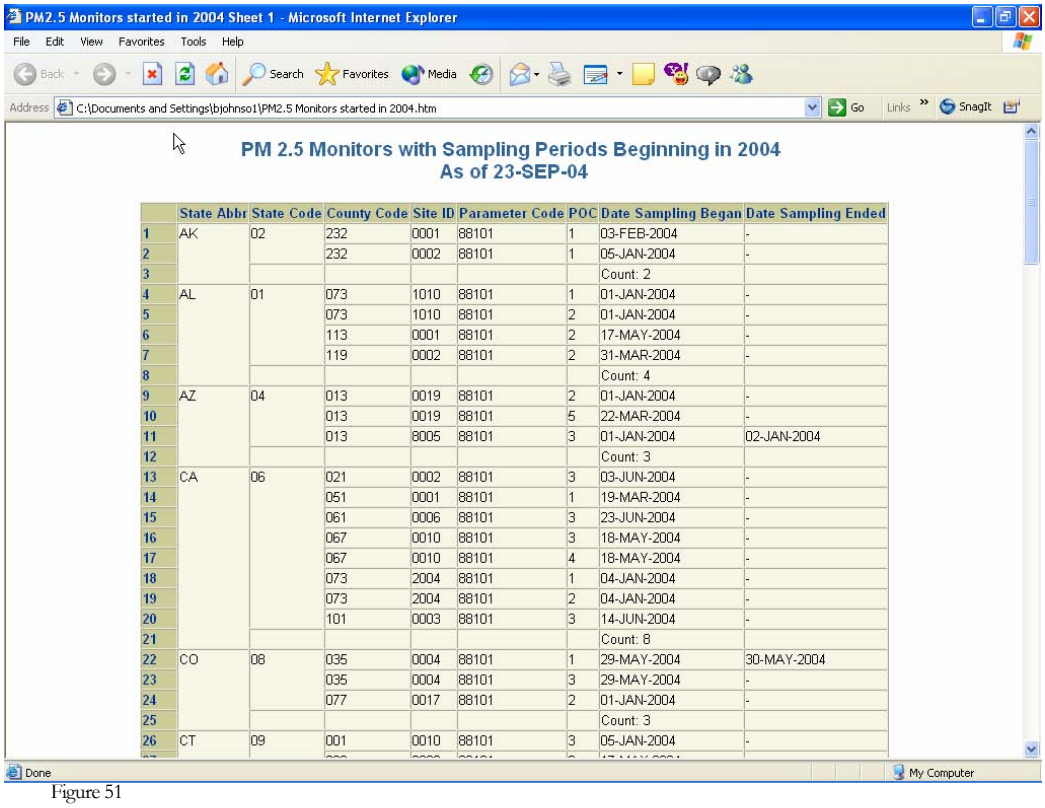
The original table exported to Excel (note the .xls extension):



State Abbr	State Code	County Code	Site ID	Parameter Code	POC	Date Sampling Began	Date Sampling Ended
AK	02	232	0001	88101	1	03-Feb-2004	-
		232	0002	88101	1	05-Jan-2004	-
						Count: 2	
AL	01	073	1010	88101	1	01-Jan-2004	-
		073	1010	88101	2	01-Jan-2004	-
		113	0001	88101	2	17-May-2004	-
		119	0002	88101	2	31-Mar-2004	-
						Count: 4	
AZ	04	013	0019	88101	2	01-Jan-2004	-
		013	0019	88101	5	22-Mar-2004	-
		013	8005	88101	3	01-Jan-2004	02-Jan-2004
						Count: 3	
CA	06	021	0002	88101	3	03-Jun-2004	-
		051	0001	88101	1	19-Mar-2004	-
		061	0006	88101	3	23-Jun-2004	-
		067	0010	88101	3	18-May-2004	-
		067	0010	88101	4	18-May-2004	-
		073	2004	88101	1	04-Jan-2004	-
		073	2004	88101	2	04-Jan-2004	-
		101	0003	88101	3	14-Jun-2004	-
						Count: 8	
CO	08	035	0004	88101	1	29-May-2004	30-May-2004
		035	0004	88101	3	29-May-2004	-
		077	0017	88101	2	01-Jan-2004	-
						Count: 3	
CT	09	001	0010	88101	3	05-Jan-2004	-
		003	2006	88101	3	17-May-2004	-
		009	0027	88101	1	01-Jan-2004	-
		009	0027	88101	3	09-Mar-2004	-
		009	0027	88101	5	24-Feb-2004	-
						Count: 5	
FL	12	031	0098	88101	3	01-Jan-2004	-

Figure 50

Exported to HTML:



	State Abbr	State Code	County Code	Site ID	Parameter Code	POC	Date Sampling Began	Date Sampling Ended
1	AK	02	232	0001	88101	1	03-FEB-2004	-
2			232	0002	88101	1	05-JAN-2004	-
3							Count: 2	
4	AL	01	073	1010	88101	1	01-JAN-2004	-
5			073	1010	88101	2	01-JAN-2004	-
6			113	0001	88101	2	17-MAY-2004	-
7			119	0002	88101	2	31-MAR-2004	-
8							Count: 4	
9	AZ	04	013	0019	88101	2	01-JAN-2004	-
10			013	0019	88101	5	22-MAR-2004	-
11			013	8005	88101	3	01-JAN-2004	02-JAN-2004
12							Count: 3	
13	CA	06	021	0002	88101	3	03-JUN-2004	-
14			051	0001	88101	1	19-MAR-2004	-
15			061	0006	88101	3	23-JUN-2004	-
16			067	0010	88101	3	18-MAY-2004	-
17			067	0010	88101	4	18-MAY-2004	-
18			073	2004	88101	1	04-JAN-2004	-
19			073	2004	88101	2	04-JAN-2004	-
20			101	0003	88101	3	14-JUN-2004	-
21							Count: 8	
22	CO	08	035	0004	88101	1	29-MAY-2004	30-MAY-2004
23			035	0004	88101	3	29-MAY-2004	-
24			077	0017	88101	2	01-JAN-2004	-
25							Count: 3	
26	CT	09	001	0010	88101	3	05-JAN-2004	-

Figure 51

Other export options:

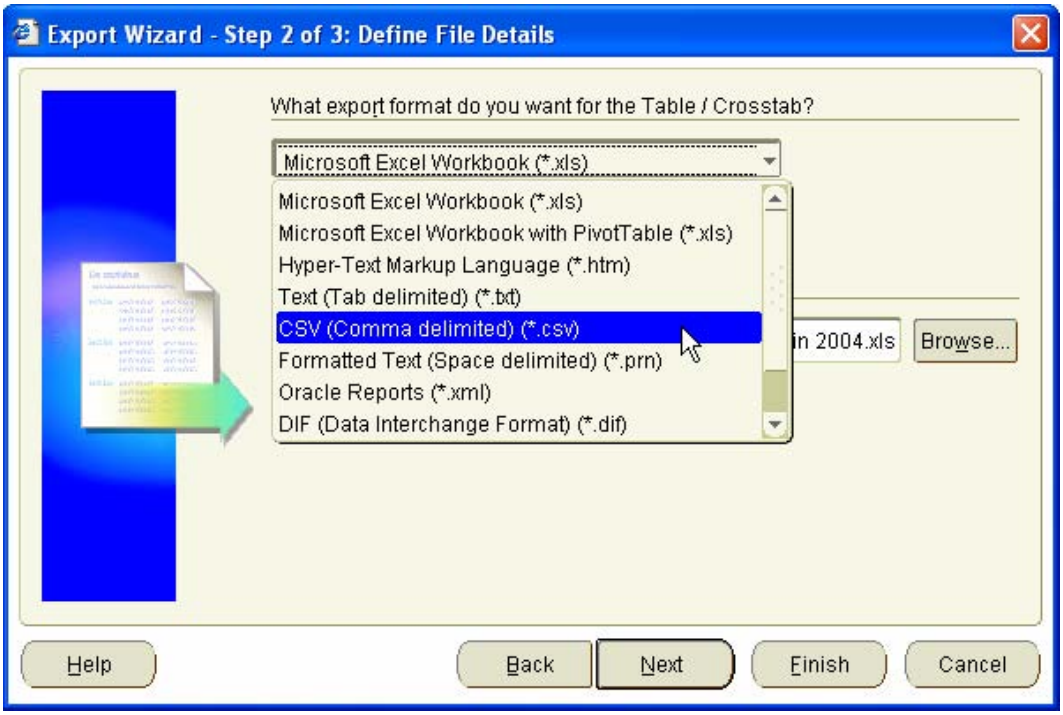
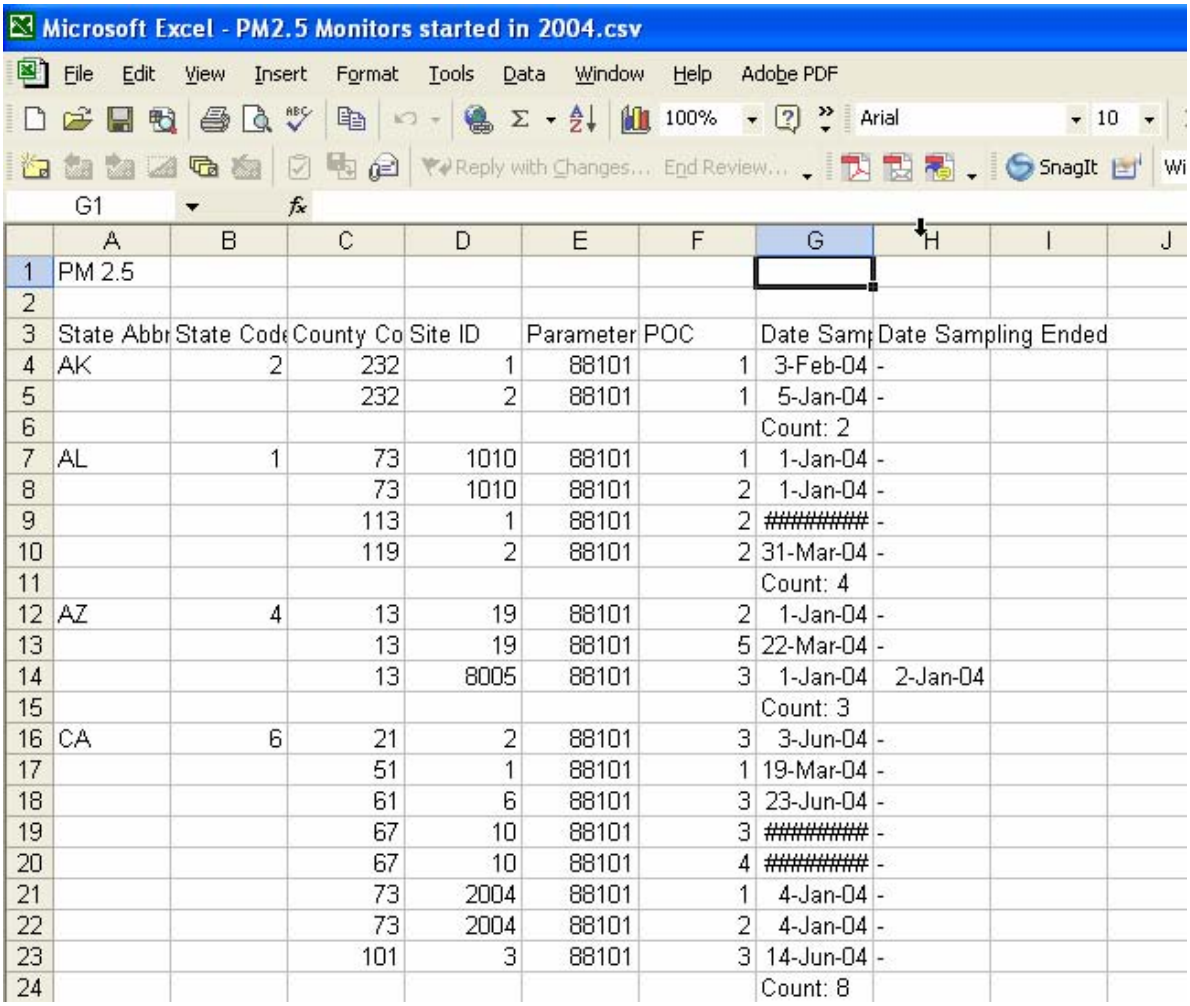


Figure 52

Exported to a comma-delimited file and opened with Excel. (Note that some columns need to be expanded to allow space for the value to show.):



	A	B	C	D	E	F	G	H	I	J
1	PM 2.5									
2										
3	State Abbr	State Code	County Co	Site ID	Parameter	POC	Date Samp	Date Sampling Ended		
4	AK	2	232	1	88101	1	3-Feb-04	-		
5			232	2	88101	1	5-Jan-04	-		
6							Count: 2			
7	AL	1	73	1010	88101	1	1-Jan-04	-		
8			73	1010	88101	2	1-Jan-04	-		
9			113	1	88101	2	#########	-		
10			119	2	88101	2	31-Mar-04	-		
11							Count: 4			
12	AZ	4	13	19	88101	2	1-Jan-04	-		
13			13	19	88101	5	22-Mar-04	-		
14			13	8005	88101	3	1-Jan-04	2-Jan-04		
15							Count: 3			
16	CA	6	21	2	88101	3	3-Jun-04	-		
17			51	1	88101	1	19-Mar-04	-		
18			61	6	88101	3	23-Jun-04	-		
19			67	10	88101	3	#########	-		
20			67	10	88101	4	#########	-		
21			73	2004	88101	1	4-Jan-04	-		
22			73	2004	88101	2	4-Jan-04	-		
23			101	3	88101	3	14-Jun-04	-		
24							Count: 8			

Figure 53

When exporting to Excel or other formats for use with spreadsheet applications, you will probably *NOT* want to include any group sorts so that each column will have a value for each row.

Sources for Help:

HELP is available online directly from Oracle.

The Helpdesk personnel are becoming familiar with Discoverer and may be able to help you
Toll Free call: 1-866-411-4372

Call or email IMG staff (See staff list at http://www.epa.gov/ttn/airs/airsaqs/contacts.htm)

Index